Detailed Syllabus
Lecture-wise Breakup

Course Code	15B11CI311	Semester Odd (specify Odd/Even)	Semester III Session 2022 -2023 Month from Aug to December		
Course Name	Data Structures				
Credits	4		**Contact Hours**		4
Faculty (Names)	**Coordinator(s)**	Prof. Krishna Asawa (J128), Ms. Sherry Garg (J62)			
	Teacher(s)	J62- Dr. Tribhuwan Tewari , Dr. Suma Don, Ms. Ankita Dr. Vivek Kumar, Dr. Dhanalekshmi G., Ms. Sherry Garg, Ms. Manju Choudhary J128- Prof. Krishna Asawa, Dr. Mukesh Sarswat, Ms. Akanksha Mahndiratta, Dr. Varsha Garg			

COURSE OUTCOMES		COGNITIVE LEVELS
C210.1	Explain abstract data types, memory allocation schemes. and need of linear and non-linear data structures	Understand Level (Level 2)
C210.2	Apply and implement various linear data structures, like array, linked list,stack, and queue in different problems and applications	Apply Level (Level 3)
C210.3	Analyze the performance of various sorting and searching techniques	Analyze Level(Level 4)
C210.4	Demonstrate and implement various operations like search, traverse, insertion, deletion, *etc.* on different non-linear data structures	Understand Level (Level 2)
C210.5	Apply appropriate data structure to design an efficient solution for given and identified problem	Create Level(Level 6)

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	Introduction	Fundamentals of Data Structures, Memory Allocation, Abstract Data Types, Linear and Non Linear DS	3
2.	Linear Data Structures	Implementation of Array, Linked List: Singly, Doubly, Circular, Implementation of Stack and Queue, Stack and Queue operations using STL, Recursion, Recursion removal using Stack	7
3.	Searching and Sorting	Searching – Linear Search, Binary Search, Interpolation Search, Median Search; Hashing – Hash Table, Chaining, Probing; Sorting – Merge, Quick, Radix, Bucket, and Count; Time and Space complexity analysis of searching and sorting algorithms	9
4.	Non-Linear Data Structure – Multi List and Tree	Implementation of Multi List, Binary Tree, K-ary Tree, Binary Search Tree, Threaded Tree, Balanced BST: AVL Tree and RB Tree, B Tree, B+ Tree, Priority Queue using Binary Heap, Binomial Heap, and Fibonacci Heap	13
5.	Non-Linear Data Structure – Graph	Fundamentals of Graph, Adjacency Matrix and List; Graph Traversal using DFS and BFS, Basic Algorithms – Shortest Path, Minimum Spanning Tree	4
6.	Advanced Data Structures	Interval Tree, Segment Tree, Range Tree, KD Tree, Quad Tree, String Data Structures: Suffix Tree, Tries, Suffix Array	6
		Total number of Lectures	**42**

Project Based Learning: Each student in a group of 3-4 will choose a real-life computer application area. To make a project, the students will analyze the problem and identify the appropriate data structures to automate the same.

Evaluation Criteria

Components	Maximum Marks
T1	20
T2	20
End Semester Examination	35
TA	25 (Mini Project(10), Attendance(5),Assignments(5), Online Test(5))
Total	**100**

Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc.

(Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format)

Text Book:

1 Dinesh P. Mehta and Sartaj Sahni, Handbook of Data Structures and Applications, 2nd Ed., Chapman and Hall/CRC Computer and Information Science Series, CRC Press

2 Ellis Horowitz,Sartaj Sahni and Dinesh P. Mehta, Fundamentals of Data Structures in C++, Galgotia Press, 2009

3 Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stein, Introduction to Algorithms, MIT Press, 3rd Edition, 2009

4 Seymour Lipschutz, Data Structures with C, Schaum's Outline Series, McGraw Hill, 2010

Reference Book

1 Alfred V. Aho, J.E. Hopcroft, Jeffrey D. Ullman, Data Structures and Algorithms, Addison-Wesley Series in Computer Science and Information Processing, 1983

2 John R. Hubbard, Data Structures with C++, Schaum's Outline Series, McGraw Hill, First Edition, 2017.

3 Robert Lafore, Object Oriented Programming in C++, SAMS, 2002

Course Code	15B11CI312	Semester: Odd	Semester :Odd Session : 2022-2023
			Month from Aug'22 to Dec'22
Course Name	Database Systems & Web		
Credits	4	Contact Hours	4(3+1)

Faculty (Names)	Coordinator(s)	Dr. Payal, Dr. Janardan
	Teacher(s) (Alphabetically)	Dr. Dev Priya, Ms. Anuradha, Ms. Kritika Aditi Sharma, Ankit Vidyarthi, Bhawna Saxena, Indu Chawla, Kirti Aggarwal, Megha Rathi, Dr. Neetu Sardana, Dr. Parmeet Kaur, Sonal

COURSE OUTCOMES		COGNITIVE LEVELS
C212.1	Explain the basic concepts of Database systems and Web components.	Understand Level (Level II)
C212.2	Model the realworld systems using Entity Relationship Diagrams and convert the ER model into a relational logical schema using various mapping algorithms	Apply Level (Level III)
C212.3	Develop a simple web application with client and server side scripting using Javascript and PHP and connect with a given relational database	Create Level (Level VI)
C212.4	Make use of SQL commands and relational algebraic expressions for query processing.	Apply Level (Level III)
C212.5	Simplify databases using normalization process based on identified keys and functional dependencies	Analyse Level (Level IV)
C212.6	Solve the atomicity, consistency, isolation, durability, transaction, and concurrency related issues of databases	Apply Level (Level III)

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	Introduction to Databases	Introduction to Databases, Physical Level of Data Storage, Structure of relational databases, Review of SQL Create, Insert, Update, Delete and Select Statements, Overview of NoSQL databases	4
2.	Web Architecture & Introduction	Motivation, characteristics and complexities of web applications, Basics, of Web Server and Application server, differences between web application and conventional software, architecture layers.	2
3.	Client Side Web Technology	SGML, HTML 5, DHTML, CSS, Java script	3
4.	Server Side Web Technology	PHP, Database Connectivity with PHP	4
5.	Database Design and ER Model	Entity type, Attributes, Relation types, Notations, Constraints, Extended ER Features	4

6.	Relational Model and Structured Query Language	SQL: Data Definition and Data Manipulation, Relational Algebra	9
7.	Procedural Language	PL/SQL: Stored Procedures, Functions, Cursors, Triggers	4
8.	Normalisation	Data Dependencies, 2NF, 3NF, BCNF, building normalised databases	5
9.	Transaction Management	Transactions, Concurrency, Recovery, Security	7
		Total number of Lectures	**42**

Evaluation Criteria

Components	Maximum Marks
T1	20
T2	20
End Semester Examination	35
TA	25(Attendance:10, Assignments/Min-Project/Class Test/Quiz/Tutorial):15
Total	**100**

Project Based Learning: Each student in a group of 3-4 will choose a real-life application area. To make a project, the students will analyse and define the need of database systems in terms of functional requirements. Each group will design the Entity Relationship diagram to understand the organisational structure of the application area and implement the database in MySQL. Each group will identify 15-20 typical queries and execute them. For handling the multiple record they will implement cursors ad triggers. Student will design the webpage of the application area and connect with the database.

Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. (Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format)

1.	Henry F Korth, Abraham Silberschatz, S. Sudurshan, Database system concepts, 5th Edition, McGraw-Hill,2006
2.	RamezElmasri, Shamkant B. Navathe, Fundamentals of Database Systems, 4th Edition, Pearson Education, 2006.
3.	Ramakrishnan, Gehrke, Database Management Systems, Mcgraw-Hill, 3rd Edition,Addison-Wesley,2006.
4.	Thomas Connolly, Carolyn Begg, Database Systems-A Practical Approach to design, Implementation and Management, 3rd Edition, Addison-Wesley,2002.
5.	"PHP and MYSQL Manual" by Simon Stobart and Mike Vassileiou
6.	"PHP and MYSQL Web Development" by Luke Welling and Laura Thomson(Pearson Education)
7.	"An introduction to database systems" by Bipin C. Desai, West Publishing Company, College & School Division, 1990 - Computers - 820 pages
8.	Christopher J. Date, Database Design and Relational Theory: Normal Forms and All That Jazz, 2012.
9.	Rajiv Chopra, Database Management System (DBMS): A Practical Approach, 5th Edition, 2016, 682 pages.

Course Code	15B17CI372	Semester Odd		Semester III Session 2022-23
				Month from August '22 to Dec'22
Course Name	Database System & Web Lab			
Credits	0-0-1	**Contact Hours**		2

Faculty (Names)	**Coordinator(s)**	Aditi Sharma, Kritika Rani
	Teacher(s) (Alphabetically)	Dr Ankit Vidyarthi, Anuradha Surolia, Dr Archana Purwar, Dr Bhawna Saxena, Dr Devpriya Soni, Dr Indu Chawla, Dr Megha Rathi, Dr Neetu Sardana, Dr Parmeet Kaur, Dr Payal Khurana Batra

	COURSE OUTCOMES	COGNITIVE LEVELS
CI271.1	Explain the basic concepts of Database systems and Web components.	Understand (Level II)
CI271.2	Develop web page using HTML, CSS with client side scripting using JavaScript.	Apply (Level III)
CI271.3	Develop a simple web application with client and server side scripting using JavaScript and PHP and connect to a given relational database.	Apply (Level III)
CI271.4	Programming PL/SQL including stored procedures, stored functions, cursors, Triggers.	Apply (Level III)
CI271.5	Design and implement a database schema for a given problem-domain and normalize a database.	Creating (Level VI)
CI271.6	Design a Project based on database management	Create (Level VI)

Module No.	Title of the Module	List of Experiments	CO
1.	Introduction to MySQL commands.	1. MySQL Create Insert, Update, Delete and Select Statements.	CI271.1
2.	Client Side Web Technology	1. Design web page using SGML, HTML 5, DHTML, CSS, Java script.	CI271.2
3.	Server Side Web Technology	1. Develop a web application with client and server side scripting using JavaScript. 2. Develop a web application with client and server side scripting using PHP. 3. Design web application with database connectivity. 4. Design web application with entering user data into database. **5.** Design web application for user - database interaction	CI271.3, CI271.5

		through PHP.	
4.	SQL	Simple Queries, Sorting Results (ORDER BY Clause), SQL Aggregate Functions, Grouping Results (GROUP BY Clause), Subqueries, ANY and ALL, Multi-Table Queries, EXISTS and NOT EXISTS, Combining Result Tables (UNION, INTERSECT, EXCEPT), Database Updates	CI271.4
5.	Procedural Language	1. Write PL/SQL program for storing data using procedures. 2. Write PL/SQL program for storing data using stored functions. 3. Write PL/SQL program for storing data using cursors and Triggers	CI271.4
6.	Project	Students are expected to designed web application based on PHP or JavaScript and connect with database to execute insert, update, retrieve and delete data queries.	CI271.5, CI271.6

Evaluation Criteria

Components	Maximum Marks
Lab Test-1	**20**
Lab Test-2	**20**
Day-to-Day	**60**
(Project, Lab Assessment, Attendance)	
Total	**100**

Project based learning: Each student in a group of 3-4 will have to develop a project based on different real-world problems. Students have to study the Web and database related Technologies before finalizing the objectives. For handling the multiple records they will implement cursors ad triggers. Student will design the webpage of the application area and connect with the database. Project development will enhance the knowledge and employability of the students in IT sector.

Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. (Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format)

1.	Henry F Korth, Abraham Silberschatz, S. Sudurshan, Database system concepts, 7th Edition, McGraw-Hill,2019
2.	Ramez Elmasri , Shamkant B. Navathe , Fundamentals of Database Systems, 5th Edition, Pearson Education, 2015.
3.	Ramakrishnan, Gehrke, Database Management Systems, Mcgraw-Hill, 3rd Edition, Addison-Wesley, 2014.
4.	Thomas Connolly, Carolyn Begg, Database Systems-A Practical Approach to design, Implementation and Management, 6rd Edition, Addison-Wesley,2015.
5.	"PHP and MYSQL Manual" by Simon Stobart and Mike Vassileiou
6.	"PHP and MYSQL Web Development" by Luke Welling and Laura Thomson(Pearson Education), 5th Edition, 2016.

Course Code	15B11HS211	Semester :ODD (specify Odd/Even)	Semester :III Session 2022-23 Month from:Aug-December
Course Name	Economics		
Credits	03	Contact Hours	2-1-0

Faculty (Names)	Coordinator(s)	Dr. Amandeep Kaur (JIIT62) Dr. Amba Agarwal (J128)
	Teacher(s) (Alphabetically)	Dr. Akarsh Arora Dr. Kanupriya Misra Bakhru Dr. Sakshi Varshney

COURSE OUTCOMES		COGNITIVE LEVELS
C206.1	*Explain* the basic micro and macro economics concepts.	Understanding Level(C2)
C206.2	*Analyze* the theories of demand, supply, elasticity and consumer choice in the market.	Analyze Level (C4)
C206.3	*Analyze* the theories of production, cost, profit and break even analysis	Analyze Level (C4)
C206.4	*Evaluate* the different market structures and their implications for the behavior of the firm.	Evaluation Level(C5)
C206.5	*Examine* the various business forecasting methods.	Analyze Level (C4)
C206.6	*Apply* the basics of national income accounting and business cycles to Indian economy.	Apply Level (C3)

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	Introduction	Economics Definition, Basic economic problems, Resource constraints and welfare maximization. Micro and Macro economics. Production Possibility Curve. Circular flow of economic activities.	2
2.	Basics of Demand, Supply and Equilibrium	Demand side and supply side of the market. Factors affecting demand & supply. Elasticity of demand & supply – price, income and cross-price elasticity. Market equilibrium price.	6
3.	Theory of Consumer Choice	Theory of Utility and consumer's equilibrium. Indifference Curve analysis, Budget Constraints, Consumer Equilibrium.	2
4.	Demand forecasting	Regression Technique Time-series Smoothing Techniques: Exponential, Moving Averages Method	4
5.	Production theory and analysis	Production function. Isoquants, Isocostlines, Optimal combination of inputs. Stages of production, Law of returns, Return to scale.	2

6.	Cost Theory and Analysis	Nature and types of cost. Cost functions- short run and long run Economies and diseconomies of scale	2
7.	Market Structure	Market structure and degree of competition Perfect competition Monopoly Monopolistic competition Oligopoly	6
8	National Income Accounting	Overview of Macroeconomics, Basic concepts of National Income Accounting,	2
9	Macro Economics Issues	Introduction to Business Cycle, Inflation-causes, consequences and remedies: Monetary and Fiscal policy.	2
		Total number of Lectures	28 (lectures)

Evaluation Criteria

Components	Maximum Marks
T1	20
T2	20
End Semester Examination	35
TA	25 (Quiz+ Project+ Class Participation)
Total	**100**

Project based learning: Students have to form a group (maximum 5 students in each group) and have to do an economic analysis on the topic assigned. An economic impact analysis assesses the impact of an event on the economy in a particular area. It generally measures the effect on revenue, profits, wages and jobs. The knowledge gained in conducting economic analysis will enhance student's decision-making skills.

Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. (Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format)	
1.	H.C. Petersen, W.C. Lewis, *Managerial Economics*, 4th ed., Pearson Education 2001.
2.	D. Salvatore, Managerial Economics in a Global Economy, 8th ed., Oxford University Press, 2015.
3.	S. Damodaran, Managerial Economics, 2nd ed., Oxford University Press, 2010.
4.	M. Hirschey, Managerial Economics, 12th ed., Cengage India, 2013.
5.	P.A. Samuelson, W.D. Nordhaus, S. Nordhaus,Economics,18th ed., Tata Mc-Graw Hill, 2006.
6.	S.K. Misra& V. K. Puri, Indian Economy, 38th ed., Himalaya Publishing House, 2020.

Detailed Syllabus
Lab-wise Breakup

Course Code	15B17CI371	Semester : Odd	Semester 3rd Session 2022
			Month from Aug-Nov 2022
Course Name	Data Structure LAB		
Credits	2	Contact Hours	4

Faculty (Names)	Coordinator(s)	Pratishtha Verma and Shikha Mehta
	Teacher(s) (Alphabetically)	J62 - Ankita wadhawa, Suma Dawn, Bharat Gupta, Dhanalakshmi, Manju, Sherry garg, Tribhuwan tiwari, Vivek Kumar, Shulabh Tyagi.
		J128 – Shikha Mehta, Akanksha Bhardwaj, Mukesh Saraswat, Krishna Asawa, RajuPal, Shikha Mehta, Varsha Garg

COURSE OUTCOMES		COGNITIVE LEVELS
C210-1	Develop programs using object oriented programming (C++)	Apply Level (C3)
C210-2	Develop various searching (Linear, Binary, Interpolation, Median) and sorting (Merge, Radix, and Quick) algorithms	Apply Level (C3)
C210-3	Experiment with lists, multi linked list for sparse matrix representation, rat in a maze problem, n queens problem, etc.	Apply Level (C3)
C210-4	Develop the programs for different tree data structure operations like, storage, search, traverse, insertion, deletion, updating, etc. on binary trees, k-ary trees, binary search trees, AVL trees, heap trees, B trees and B+ trees.	Apply Level (C3)
C210-5	Develop the various operations (Storage, Search, Traverse, Insertion, Deletion, Updating, Path finding, Minimum spanning tree etc.) on different Graph data structures.	Apply Level (C3)
C210-6	Develop the programs for priority queue and hashing techniques.	Apply Level (C3)

Module No.	Title of the Module	List of Experiments	CO
1.	Introduction	Fundamentals of Data Structures, Memory Allocation, AbstractData Types, Linear and Non Linear DS	C210-1
2.	Linear Data Structures using Object Oriented Programming	Review of linear data structures; Basics of Object oriented programming (OOPS) - Class Diagram and Relationship – Association, Aggregation, and Composition, Polymorphism, Templates, STL; Implementation of Array, Stack and Queue using OOPS, Stack, and Queue operations using STL;	C210-1
3.	Lists	Introduction to lists, multi linked list for sparse matrix representation, rat in a maze problem, n queens problem	C210-3
3.	Searching and Sorting using Object Oriented Programming	Searching – Linear Search, Binary Search, Median Search; Hashing – Hash Table, Chaining, Probing; Sorting – Merge, Quick, Radix, Bucket, and Count; Time and Space complexityanalysis of searching and sorting algorithms	C210-2
4.	Non-Linear Data Structure – Tree	Binary Tree, K-ary Tree, Binary Search Tree, Threaded Tree, AVL Tree, B Tree, B+ Tree, Priority Queue using Binary Heap	C210-4

4.	Non-Linear Data Structure – Graph	Fundamentals of Graph, Adjacency Matrix and List; Graph Traversal using DFS and BFS, Basic Algorithms – Shortest Path,Minimum Spanning Tree	**C210-5**
5.	Performance Evaluation of Various Data Structures	Apply and evaluate performance of various data structures over following applications: Tower of Hanoi, Priority Queue, Expression Conversion and Evaluation, etc.	**C210-6**
6.	Hashing	Introduction to hashing, Collision resolution – open and closed hashing methods, Cuckoo hashing, Coalesced Hashing, PerfectHash function, Universal Hashing.	**C210-6**

Evaluation Criteria

Components	Maximum Marks
Lab Test -1	**20**
Lab Test -2	**20**
Lab Evaluation	**20**
Mini-Project	**15**
Lab Quiz	**10**
Attendance	**15**
Total	**100**

Project based learning:

Project Based Learning: Each student in a group of 3-4 will develop one project using some data structures and explaining the real time usage of the developed application. The project is to be assessed based on the data structures involved and mapping it to real time problem. This course will help students grow their technical skills in terms of implementation and in turn will help in employability like web development, algorithms design and efficiency improvement.

Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. (Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format)	
Text Books:	
1	Dinesh P. Mehta and Sartaj Sahni, Handbook of Data Structures and Applications, 2nd Ed., Chapman and Hall/CRC Computer and Information Science Series, CRC Press
2	Ellis Horowitz, Sartaj Sahni and Dinesh P. Mehta, Fundamentals of Data Structures in C++, Galgotia Press, 2009
3	Alfred V. Aho, J.E. Hopcroft, Jeffrey D. Ullman, Data Structures and Algorithms, Addison-Wesley Seriesin Computer Science and Information Processing, 1983
4	Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stein, Introduction toAlgorithms, MIT Press, 3rd Edition, 2009
5	Robert Lafore, Object Oriented Programming in C++, SAMS, 2002
References:	
ACM Transactions on Data Structure and its applications	
IEEE Press Computer Algorithm and Data Structure	

Course Description

Course Code	15B17EC271	Semester -: Odd (specify Odd/Even)	Semester-: III, Session 2022 -2023 Month-: August- December
Course Name	Electrical Science Lab-2		
Credits	1	**Contact Hours**	0-0-2

Faculty (Names)	**Coordinator(s)**	Dr. Abhishek Kashyap, Mr. Shivaji Tyagi
	Teacher(s)	Prof. Jitendra Mohan, Prof. Sajaiveer Singh, Dr. Bajrang Bansal, Dr. Yogesh Kumar, Dr. Abhishek Kashyap, Dr. Atul Kumar, Dr. Hemant Kumar, Dr. Kapil Dev Tyagi, Dr. Kaushal Nigam, Dr. Satyendra Kumar, Dr. Varun Goel, Mr. Vinay Tikkiwal, Mr. Shivaji Tyagi, Dr. Vijay Khare, Dr. Gaurav Khanna, Ms. K. Nisha, Dr. Ankur Bhardwaj, Mr. Atul Kumar Srivastava, Mr. Vishal Narain Saxena, Ms. Bhawna Gupta, Mr. Mandeep Narula, Mr. Ritesh Kumar Sharma, Dr. Garima Kapur, Dr. Ajay Kumar, Dr. Samriti Kalia, Mrs. Smriti Bhatnagar, Ms. Shradha Saxena,

COURSE OUTCOMES		COGNITIVE LEVELS
C204.1	Study and analyze time response of first order and second order passive circuits	Analyzing(C4)
C204.2	Understand two port resistive network parameters, operational amplifier applications and first order filter.	Understanding(C2)
C204.3	Understand the characteristics of pn junction diode and its applications	Understanding(C2)
C204.4	Understand the characteristics of Common emitter and common base configurations of BJT.	Understanding(C2)

Module No.	Title of the Module	List of Experiments	COs
1.	First and Second order passive circuits	Study the transient response of a series RC circuit and understand the time constant concept using pulse waveforms.	C204.1
		Study of Time Response of R-L-C Network	C204.1
2.	Two port resistive networks	To determine the Z-parameters of a 2- port resistive network.	C204.2
		To determine the h-parameters of a two-port resistive network.	C204.2

3.	Operational amplifier and its applications	To realize inverting and non inverting configurations using Op- Amp IC 741 amplifier.	C204.2
		To realize an adder and substractor circuits using Op- Amp IC 741 amplifier.	C204.2
4.	PN junction and Zener diodes	To study the forward and reverse bias (volt-ampere) characteristics of a simple p-n junction diode. Also determine the forward resistance of the diode.	C204.3
		To study the forward and reverse bias volt-ampere characteristics of a zener diode. Also determine the breakdown voltage, static and dynamic resistances.	C204.3
5.	Diode applications	To observe the output waveform of half/full wave rectifier and calculate its ripple factor and efficiency.	C204.3
		Realization of desired wave shapes using clipper and clamper circuits.	C204.3
		To study Zener voltage regulator and calculate percentage regulation for line regulation and load regulation.	C204.3
6.	Bipolar Junction Transistor	To plot input characteristics of a common emitter npn BJT.	C204.4
		To plot output characteristics of a common emitter npn BJT.	C204.4
		To plot input characteristic of a BJT in Common Base Configuration.	C204.4
		To plot output characteristic of a BJT in Common Base Configuration.	C204.4
7.	First order filters	To plot frequency and phase response of First order low pass and high pass filter.	C204.2

Evaluation Criteria

Components	Maximum Marks
Viva1	20
Viva2	20
Attendance, and D2D	60 (15+45)
Total	**100**

Project Based Learning: Students will learn about the transient response of first and second order passive circuits. Also, student will learn about Op-amp and its applications like adder and substractor circuits. This course also gives the understanding of semiconductor diodes and Bipolar Junction Transistor. These concepts are the required for Electronic circuit design.

Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. (Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format)	
1.	R.C.Dorf, A. Svoboda, "Introduction to Electric Circuits",9th ed, John Wiley & Sons, 2013.
2.	D. Roy Choudhary and Shail B. Jain, " Linear Integrated Circuit," 2nd Edition, NAILP, 2003
3.	A.S .Sedra & K.C.Smith, Microelectronic Circuits Theory and Application, 6th Edition, Oxford

	University Press, 2015(Text Book)

Detailed Syllabus
Lecture-wise Breakup

Course Code	**22B15HS211**	Semester: Odd	Semester: IV Session: 2022-23 Month: August-December
Course Name	**Professional Communication Practice**		
Credits	0	**Contact Hours**	**0-0-2**

Faculty (Names)	**Coordinator(s)**	Dr AnshuBanwari Dr Swati Sharma
	Teacher(s) (Alphabetically)	Dr Ankita Das, Dr Anshu Banwari, Dr Badri Baja, Dr Ekta Srivastava, Dr Debjani Sarkar, Dr.Deepak Verma, Dr Monali Bhattacharya, Dr Mukta Mani, Dr Priyanka Chhaparia, Dr Nilu Choudhary, Dr Shirin Alavi, Dr Swati Sharma

CO Code	COURSE OUTCOMES	COGNITIVE LEVELS
C251.1	Explore one's strengths and frame professional goals	Analyze(C4)
C251.2	Apply workplace communication skills in a professional setting	Apply(C3)
C251.3	Develop their professional and social competence	Apply(C3)
C251.4	Demonstrate the ability to apply professional ethics in contemporary workplace settings	Understanding(C2)

Module No.	Title of the Module	Description of the module	List of Activities	Number of Labs
1.	Intrapersonal Communication	Self-exploration, Setting Personal, Professional Goals with Holistic Perspectives	Practical Sessions on a) Self Inventory, b) Goal Setting c) SWOC Analysis	3 labs
2	Interpersonal Communication	Extending Intrapersonal influence for enhancing social competence. Inculcating assertiveness, empathy, Inclusivity and win- win approach to communication.	Practice session through role-play on situation related to a) workplace conflict, b) business negotiation c) Gender sensitization	3 labs
3.	Professional Interaction and Etiquettes	Liaison harmoniously with audience, taking initiatives and team focus	Practical Session on mediated interpersonal communication a) Topical group discussion, b) case study group discussion c) Mock interviews)	4 labs
4.	Professional written communication	Enhancing professional competency through professional writing	Practical session on styles of workplace writing: a) E-mail, b) Report, c) Website and Resume writing	3 labs

5.	Professional Ethics	Enhancing Ethical Awareness	Case Study and oral discussion on ethical dilemmas	1 Lab
		Total number of Labs		**14**

Evaluation Criteria

Components	Maximum Marks
Lab test 1	**20 (Group Discussion)**
Lab Test 2	**20 (End Term Presentation)**
PBL	**30**
Assignment	**20**
Attendance	**10**
Total	**100**

Project-based learning: The students in groups of 4-5 will identify an organization of their choice and present a report (based on desk-based research) focusing on the skills, values and ethics promoted by the company. Based on the insight gained from the research each student is then required to pitch their candidature through a video CV.

Reference:

1	George Cheney, Daniel J. Lair, Dean Ritz and Brenden E. Kendall, Just a Job?: Communication, Ethics and Professional Life, Oxford University Press, USA, 2009.
2	Timothy S. Boswood, "Redefining the professional in International Professional Communication," in Exploring the Rhetoric of International Professional Communication, Carl R. Lovitt and Dixie Goswami, Ed. Routledge, 2020, pp. 111-136.
3	Steven A. Beebe and Timothy P. Mottet. Business and Professional Communication, Principles and Skills for Leadership, Pearson, 2013.
4	R. Almonte, A Practical Guide to Soft Skills: Communication, Psychology, and Ethics for Your Professional Life. Routledge, 2021.
5	K. M. Quintanilla & S. T. Wahl, Business and Professional Communication: Keys for Workplace Excellence. Sage Publications, 2020
6	K.Floyd & P. W, Cardon, Business and Professional Communication. McGraw-Hill Education,2020
7	P. Hartley & P. Chatterton, Business Communication: Rethinking your professional practice for the post-digital age. Routledge, 2015