



Jagan Institute of Management Studies jims

NAAC A++ Grade & NBA Accredited MCA Program
3, Institutional Area, Sector-5, Rohini, Delhi-110085

Course Teaching Plan

Annexure IV-H





LESSON PLAN

Course Code: **MCA- 106**

Course Name: **Python Programming**

LEARNING OBJECTIVES:

In this course, the learners will be able to develop expertise related to:

1. Master the fundamentals of writing Python scripts
2. Understand decision-making and functions in python
3. Interpret Object-oriented programming features in python
4. Gain knowledge of data structures in python
5. Explore GUI programming and database operations in python

PRE-REQUISITES:

1. Problem Solving Skills

COURSE OUTCOMES (COs):

After completion of this course, the learners will be able to:-

CO #	Detailed Statement of the CO	BT Level	Mapping to PO#
CO1	Gain knowledge of basic programming with python.	BTL2	PO1,PO2,PO7
CO2	Familiarize with python string handling methods and user defined functions.	BTL2	PO1,PO2,PO4,PO7
CO3	Apply and use the concepts of data structures like lists, tuples, sets and dictionaries.	BTL3	PO1,PO2,PO3,PO4,PO7, PO11
CO4	Inspect file handling and object-oriented programming techniques.	BTL4	PO1,PO2,PO3,PO4,PO5, PO7, PO11
CO5	Evaluate and visualize the data using python libraries.	BTL5	PO2,PO3,PO4,PO5,PO7, PO11
CO6	Develop python applications with database connectivity operations.	BTL6	PO1,PO2,PO3,PO4,PO5,PO6,PO7, PO8,PO9,PO11, PO12

UNIT-I

No. of Hours: 10 Chapter/Book Reference: TB1 [Chapter 5], TB3 [Chapters 1, 2, 3, 4, 5, 6, 15]

Objective: To learn basic programming constructs in Python.

Expected Outcome: Demonstrate knowledge of basic programming constructs in Python. Learn usage of functions and modules.

Conceptual Introduction: History, Features and Future of Python, Installation, Interactive Shell, Program Structure, Identifiers, Keywords, Escape Sequences, Data-Types, Variables, Assignments, Immutable Variables, Operators and Operands, Precedence of Operators, Type-Conversion Functions, Short-circuit vs. Lazy Evaluation, Input and Output Functions, Comments, Command-Line arguments.





Control Flow: Conditional Statements: if, if-else, if-elif-else, Nested Conditionals, Loops: for, while, break, and continue statements.

Functions: Defining, Calling and Types of Functions, Arguments and Return Values, Formal vs. Actual Arguments, Scope and Lifetime, Keyword Arguments, Default Arguments, Decorators, Iterators and Generators, Recursion.

Modules: Importing Modules, Math and Random Module, Packages and Composition.

Mapping: CO1, CO2

BTL1, BTL2

UNIT-II

No. of Hours: 11

Chapter/Book Reference: TB2 [Chapters 5, 18], TB3[Chapters 3, 10, 11, 13, 14]

Objective: Learning string handling methods, data structures like lists, tuples, sets and dictionaries. Understanding concept of file handling.

Expected Outcome: Illustrate string handling functions. Apply data structure primitives. Inspect file handling.

Syllabus:

String Manipulations: Basic functions of Strings, Subscript Operator, Indexing, Slicing and Immutable Strings.

Data Structures: Lists, Tuples, and Dictionaries, Basic List Operations, List Slicing, List Methods, Cloning Lists, Mutability, Searching and Sorting Lists, Tuples: Tuple Assignment, Tuple as Return Value, Dictionary Literals, Adding and Removing Items, Accessing and Replacing Values, Traversing Dictionaries, Sorting Dictionaries, Dictionary Operations, Sets Operations.

File Handling: Text Files-Writing and Reading Operations, Creating and Reading a Formatted File, Manipulating Files and Directories, Closing Files.

Mapping: CO2, CO3, CO4

BTL2, BTL3, BTL4

UNIT-III

No. of Hours: 12

Chapter/Book Reference: TB3 [Chapters 7, 8, 12,13]

Objective: To learn object oriented programming concepts, threads implementation and exception handling.

Expected Outcome: Understanding concepts of object oriented programming and threads along with exception handling.

Syllabus:





Object Oriented Programming: Classes, Objects, Attributes and Methods, Access Specifiers, Constructors, Static Methods, Data Hiding, Inheritance, Polymorphism, Operator Overloading, Abstract Classes.

Threads: Multi-Threading, Life-Cycle of a Thread, Synchronization using Locks and Semaphores.

Exception Handling: Exception Class Hierarchy, Except clause, Try, Finally clause, User-Defined Exceptions, Assertions.

Mapping: CO4

BTL 3

UNIT-IV

No. of Hours: 12

Chapter/Book Reference: TB1 [Chapters 11, 12], TB3 [Chapters 9, 16-23]

Objective: Learn advanced python concepts with map, reduce and filter functions. Understanding numpy and pandas library. Performing data visualization using different types of charts. Performing GUI programming and database connectivity.

Expected Outcome: Evaluate and visualize the data using appropriate python libraries. Develop python applications with database connectivity operations.

Syllabus:

Advanced Python: Lambda and List Comprehensions, Map, Reduce and Filter Functions

NumPy Library: Introduction to NumPy, Creation of One-Dimensional Arrays, Reshaping of an Array, Element-wise Operations, Aggregate Operations, Array Indexing, Array Slicing, Insert Row/Columns, Append Row/Columns, Array Manipulation Operations, Multi-Dimensional Arrays.

Pandas Library: Data Preparation and Pre-Processing, Series, Querying a Series, DataFrames, DataFrame Indexing and Loading, Querying a Data Frame, Indexing Data Frames, Missing Values.

Data Visualisation: Graphs in Python: Bar charts, Pie-charts, Scatter plots, Multiple plots, Subplots, Legends, Changing figure Size, Styling plots using Matplotlib Library.

GUI Programming: Creating User-interface, GUI Widgets with Tkinter, Creating Layouts, Check Box, Radio Buttons, List Box, Menus, Menus Options, Dialog Boxes

Database Access: Database Connectivity Operations: Create, Insert, Select, Delete, Drop, Update, Joins.

Mapping: CO5, CO6

BTL5, BTL6

TEXT BOOKS:

TB1. Budd T A, "Exploring Python", McGraw-Hill Education, 1st Edition, 2011.

TB2. Mark Lutz, "Learning Python", O'Reilly, 4th Edition, 2013.





TB3. Y. Daniel Liang, "Introduction to Programming Using Python", Pearson, 1st Edition, 2013.

REFERENCE BOOKS:

RB1. Kenneth A. Lambert, "The Fundamentals of Python: First Programs", Cengage Learning, 1st Edition, 2011.

RB2. Allen Downey, "Think Python: How to Think Like a Computer Scientist", O'Reilly, 2nd Edition, 2015.

RB3. Reema Thareja, "Python Programming using Problem Solving Approach", Oxford University Press, 1st Edition, 2017.

RB4. Joel Grus, "Data Science from Scratch", O'Reilly, 2nd Edition, 2019. RB5. Tony Gaddis, "Starting out with Python", Pearson, 3rd Edition, 2014





Lecture Plan for MCA (Second Semester)

Course Code: MCA-106	L T C
Course Name: Python Programming	3 1 4
LEARNING OBJECTIVES: In this course, the learners will be able to develop expertise related to: 1. Master the fundamentals of writing Python scripts 2. Understand decision-making and functions in python 3. Interpret Object-oriented programming features in python 4. Gain knowledge of data structures in python 5. Explore GUI programming and database operations in python	

LECTURE PLAN

S.No	Topics	No. of Sessions(1hr)	CO Mapping	BTL
1.	UNIT-I : (CO1) Conceptual Introduction: History, Features and Future of Python, Installation, Interactive Shell	1	CO1	BTL1
2.	Program Structure, Identifiers, Keywords, Escape Sequences, Data-Types, Variables, Assignments, Immutable Variables,	1	CO1	BTL1
3.	Operators and Operands, Precedence of Operators, Type-Conversion Functions, Short-circuit vs. Lazy Evaluation	1	CO1	BTL2
4.	Input and Output Functions, Comments, Command-Line arguments.	1	CO1	BTL2
5.	Control Flow: Conditional Statements: if, if-else, if-elif-else, Nested Conditionals	1	CO1	BTL2
6	Loops: for, while, break, and continue statements.	1	CO1	BTL2
7.	(CO2)	1	CO2	BTL2





	Functions: Defining, Calling and Types of Functions			
8.	Arguments and Return Values, Formal vs. Actual Arguments	1	CO2	BTL2
9.	Scope and Lifetime, Keyword Arguments, Default Arguments, Decorators, Iterators and Generators, Recursion.	1	CO2	BTL2
10.	Modules: Importing Modules, Math and Random Module, Packages and Composition.	1	CO2	BTL2
11.	UNIT – II (CO2) String Manipulations: Basic functions of Strings, Subscript Operator	1	CO2	BTL2
12.	Indexing, Slicing and Immutable Strings.	1	CO2	BTL2
13.	Data Structures: (CO3) Lists, Tuples, and Dictionaries	1	CO3	BTL3
14.	Basic List Operations, List Slicing, List Methods, Cloning Lists.	1	CO3	BTL3
15.	Mutability, Searching and Sorting Lists	1	CO3	BTL3
16.	Tuples: Tuple Assignment, Tuple as Return Value, Dictionary Literals, Adding and Removing Items, Accessing and Replacing Values	1	CO3	BTL3
17.	Traversing Dictionaries, Sorting Dictionaries, Dictionary Operations	1	CO3	BTL3
18.	Sets Operations.	1	CO3	BTL3
19.	File Handling: (CO4) Text Files-Writing and Reading Operations	1	CO4	BTL4
20.	Creating and Reading a Formatted File, Manipulating	1	CO4	BTL4
21.	Files and Directories, Closing Files.	1	CO4	BTL4
22.	UNIT-III (CO4) Object Oriented Programming: Classes, Objects	1	CO4	BTL4





23	Attributes and Methods, Access Specifiers	1	CO4	BTL4
24.	Constructors, Static Methods	1	CO4	BTL4
25.	Data Hiding, Inheritance	1	CO4	BTL4
26.	Polymorphism	1	CO4	BTL4
27.	Operator Overloading, Abstract Classes.	1	CO4	BTL4
28.	Threads: Multi-Threading	1	CO4	BTL4
29.	Life-Cycle of a Thread	1	CO4	BTL4
30.	Synchronization using Locks and Semaphores.	1	CO4	BTL4
31.	Exception Handling: Exception Class Hierarchy	1	CO4	BTL4
32.	Except clause, Try, Finally clause	1	CO4	BTL4
33.	User-Defined Exceptions, Assertions.	1	CO4	BTL4
34.	UNIT-IV (CO5) Advanced Python: Lambda and List Comprehensions	1	CO5	BTL5
35	Map, Reduce and Filter Functions	1	CO5	BTL5
36	NumPy Library: Introduction to NumPy, Creation of One-Dimensional Arrays	1	CO5	BTL5
37	Reshaping of an Array, Element-wise Operations,	1	CO5	BTL5
38	Aggregate Operations, Array Indexing, Array Slicing,	1	CO5	BTL5
39	Insert Row/Columns, Append Row/Columns	1	CO5	BTL5
40	Array Manipulation Operations, Multi-Dimensional Arrays.	1	CO5	BTL5





41.	Array Manipulation Operations, Multi-Dimensional Arrays.	1	CO5	BTL5
42.	DataFrame Indexing and Loading, Querying a Data Frame, Indexing Data Frames, Missing Values.	1	CO5	BTL5
43.	Data Visualisation: (CO5) Graphs in Python: Bar charts, Pie-charts, Scatter plots, Multiple plots, Subplots, Legends, Changing figure Size, Styling plots using Matplotlib Library.	1	CO5	BTL5
44.	GUI Programming: Creating User-interface, GUI Widgets with Tkinter, Creating Layouts, Check Box, Radio Buttons, List Box, Menus, Menus Options, Dialog Boxes	1	CO5	BTL5
45.	Database Access: (CO6) Database Connectivity Operations: Create, Insert, Select, Delete, Drop, Update, Joins.	1	CO6	BTL6
	TOTAL SESSIONS(1 hr)	45		





Lesson Plan

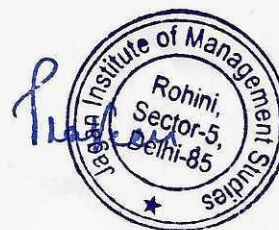
BCA Sem II: Data Structures using C

Class No.	Unit	Topic
		Assignment 1 to be announced
1	Unit I	Introduction to Data Structures, Importance of DS, Algorithm Writing,
2		Data Structures, Classification and Operations of Data Structures.
3		Introduction to Algorithms- Attributes, Design Techniques, Time Space Trade Off
4		Arrays: Single Dimension
5		Two-Dimension and Introduction to Multi Dimensions
6		Memory Representation, Address Calculation
27		Sparse Matrices- Types, Representation.
8		Linear and Binary Search
9		Sorting: Selection Sort, Bubble Sort
10		Insertion Sort, Merge Sort
11		Elementary Comparison of Searching and Sorting Algorithms
12		Hashing: Hash Table.
13		Hash Functions and Collision Resolution
14		Class Test and Assignment Submission
		Tutorial 1
		Tutorial 2
		Class Test and Group Project 1 will be announced
		Assignment 2 to be announced
15		Dynamic memory allocation
16		Comparison of Static and Dynamic memory
17	Unit II	Introduction to linked lists
18		Creation of Linked List
19		Basic operations on Linked List-Traversal
20		Basic operations on Linked List-Insertion and Deletion
21		Basic operations on Linked List- reversing and merging of lists
22		Two way lists
23		Revisiting Two way List
24		Use of headers and circular list
		Tutorial 3
		Tutorial 4
		Class Test and Group Project 2 will be announced
		Assignment 3 to be announced
25	UNIT 3	Stack concept and theory, Stack on array
26		Primitive operations on Stack and multi stack
27		Stack using Linked List
28		Polish Notations; Evaluation of postfix expression
29		Conversion from infix to postfix





30		Queue - Introduction and primitive operations on queues;
31		Queue using a Linked List
32		D-queues
33		Circular Queue
34		Priority queues
35		Class Test/ Assignment Submission
		Tutorial 5
		Tutorial 6
		Assignment 4 to be announced
36	Unit 4	Graph Concept
37		Graph representation- Matrix representation
38		Graph representation using linked list
39		Introduction to Trees: Tree Terminology
40		Binary Tree and Binary Search Tree
41		BST basic operations: creation of BST insertion deletion
42		BST basic operations: Recursive Traversal of tree
43		BST basic operations: insertion and deletion
44		AVL Tree
45		Heap Tree
46		m-way tree and B-tree
		Class Test and Group Project 2 allocation
		Revision / Tutorial
		Revision / Tutorial

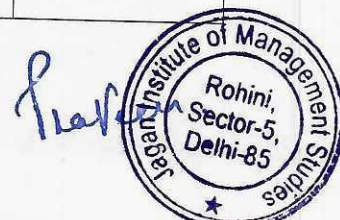




Lesson Plan

BCA 106T: Data Structures and Algorithms

<u>Unit</u>	<u>Topics</u>	<u>Text / Ref Book</u>	<u>Objective</u>	<u>Target CO</u>	<u>Outcome</u>
1	Linear Data Structures-Static: Introduction to Algorithms- Attributes, Design Techniques, Time Space Trade Off, Data Structures, Classification and Operations of Data Structures. Arrays: Single Dimension, Two-Dimension and Introduction to Multi Dimensions, Memory Representation, Address Calculation, Sparse Matrices- Types, Representation. Searching and Sorting: Linear and Binary Search, Selection Sort, Bubble Sort, Insertion Sort, Merge Sort, Elementary Comparison of Searching and Sorting Algorithms. Hashing: Hash Table, Hash Functions, and Collision Resolution.	TB1 [Chapters 1, 4, 9], TB2 [Chapters 1, 6, 7], TB3 [Chapters 1, 2, 6, 10]	To introduce the concept of data structures. To understand various searching and sorting procedures.	CO 1, CO 3	Students are well aware of data structures and algorithms and their importance in real life projects/
2	Linear Data Structures-Dynamic Introduction: Dynamic Memory Allocation, Dynamic Memory versus Static Memory Allocation. Linked List Types: Singly Linked List, Doubly Linked List, Header Linked List, Circular Linked List. Operations: Creation, Insertion, Deletion, Modification, Searching, Sorting, Reversing, and	TB1 [Chapter 5], TB2 [Chapter 4], TB3 [Chapter 3]	To introduce dynamic memory allocation, concept of linked list and its types with operations.	CO 1, CO 2	Students are aware of dynamic memory allocation and practical usage of static and dynamic representation of data





	Merging.				
3	Abstract Data Types: Stacks: Introduction, Static and Dynamic Implementation, Operations, Applications- Evaluation and Conversion between Polish and Reverse Polish Notations. Queues: Introduction, Static and Dynamic Implementation, Operations, Types- Linear Queue, Circular Queue, Doubly Ended Queue, Priority Queue.	TB1 [Chapter 6], TB2 [Chapters 2, 4], TB3 [Chapters 4, 5]	To introduce students with abstract data types, stacks and queues.	CO 1, CO2, CO4	Students will be well-versed with concept of stacks, polish notations and queues and a real life application of algebraic equations.
4	Non-Linear Data Structures: Introduction to Graphs: Notations & Terminologies, Representation of Graphs- Adjacency Matrix, Incidence Matrix and Linked Representation. Trees: Notations & Terminologies, Memory Representation, Binary Trees Types- Complete, Full, Strict, Expression Binary Tree, Tree Traversals (Recursive), Binary Search Tree and Basic Operations Introduction and Creation (Excluding Implementation): AVL Tree, Heap Tree, M- Way Tree, and B Tree.	TB1 [Chapters 7, 8], TB2 [Chapters 5, 8], TB3 [Chapters 7, 8]	To introduce nonlinear data structures like graphs and trees along with their real-life usage.	CO1, CO2, CO4	Students will be aware of non-linear data structures like trees and graphs and their practical application areas.





Lesson Plan

Subject: Corporate Governance

Subject Code: BBA 206

Class: BBA IV Semester

Teaching Pedagogy:

The teaching approach will include interactive lectures, case studies, role-playing, debates, and real-life corporate examples to help students understand the principles and applications of corporate governance.

Unit	Unit I: Corporate Governance
Duration	14 Hours
Objective	To develop an understanding of corporate governance, its significance, principles, and application in modern businesses.
Learning Outcomes	By the end of this unit, students will be able to:
	Define corporate governance and explain its importance in today's business world.
	Analyze the principles of corporate governance and their implementation in different business structures.
	Understand various models and theories of corporate governance used in global and Indian contexts.
	Discuss the role of management, institutional investors, and regulatory bodies in ensuring corporate governance.
Unit	Unit II: Human Values in Business
Duration	14 hours
Objective	To introduce the concept of human values and their relevance in business decision-making.
Learning Outcomes	By the end of this unit, students will be able to:
	Understand the meaning and significance of human values in business and corporate life.
	Identify the process of value formation through socialization.
	Differentiate between various types of values – social, aesthetic, organizational, and spiritual.
	Explain the concept of value crisis and its impact on decision-making.
	Understand the difference between knowledge and wisdom, and their role in ethical leadership.
	Explore the concept of Karma and different types of Karma (Karma Yoga, Nishkam Karma, and Sakam Karma) and their relevance in business.





Jagan Institute of Management Studies

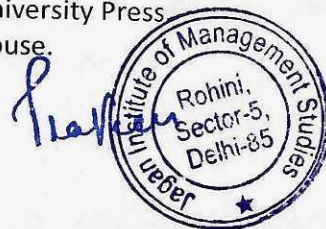
NAAC A++ Grade & NBA Accredited MCA Program

3, Institutional Area, Sector-5, Rohini, Delhi-110085

Unit	Unit III: Business Ethics
Duration	14 hours
Objective	To develop an understanding of business ethics and its application in corporate decision-making.
Learning Outcomes	By the end of this unit, students will be able to:
	Define business ethics and explain its significance in corporate and organizational contexts.
	Understand the approaches and frameworks for ethical decision-making.
	Discuss ethical theories – Normative and Descriptive Ethics.
	Explain the ethos of Vedanta in management and its application in business.
	Identify the role of regulatory agencies in corporate ethics.
	Learn how organizations set standards for ethical behavior and assess ethical performance.
Unit	Unit IV: Ethical and Moral Issues in Business
Duration	14 hours
Objective	To analyze various ethical and moral dilemmas in different functional areas of business.
Learning Outcomes	By the end of this unit, students will be able to:
	Discuss ethical issues in Finance, HR, and Marketing.
	Understand whistle-blowing and its impact on corporate culture.
	Analyze the ethical challenges related to truth in marketing, advertising manipulation, and coercion. Understand the concept of trade secrets, insider trading, and corporate disclosure.

Suggested Readings: (All latest editions to be referred)

1. Fernando AC, *Business Ethics*, Pearson Education
2. Balachandran V, *Corporate Governance, Ethics and Social Responsibility*, PHI 3. Mandal SK, *Ethics in Business and Corporate Governance*, Mc Graw Hill Education
3. Mandal, S., *Ethics in Business and Corporate Governance*, Mc Graw Hill Education Company
4. Kumar, S., *Corporate Governance*. Oxford, England: Oxford University Press
5. Sherlekar, S. A., *Ethics in Management*, Himalya Publishing House.

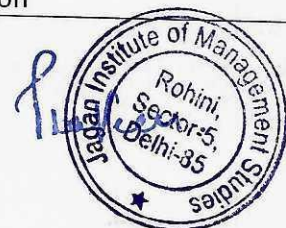




Lecture Plan

Corporate Governance, Ethics & Social Responsibility of Business BBA206

Lecture No	Topic to be Covered	Remarks	Teaching Pedagogy
Unit 1: Corporate Governance			
1	Corporate Governance, Meaning, significance	CO1, BTL1, BTL2	Lecture with examples, Discussion on current governance practices
2	Principles of Corporate Governance	CO1, BTL1, BTL2	Conceptual lecture, Interactive Q&A
3	Management and corporate governance	CO1, BTL1, BTL2	Conceptual lecture, Interactive Q&A
4	Theories of corporate governance	CO1, BTL1, BTL2	Conceptual lecture, Interactive Q&A
5	Theories of corporate governance	CO1, BTL1, BTL2	Conceptual lecture, Interactive Q&A
6	Model of corporate governance	CO1, BTL1, BTL2	Diagram-based explanation, Group activity to create governance models
7	Whistle blowing, Class Action	CO1, BTL1, BTL2	Conceptual lecture, Interactive Q&A
8	Role of Institutional Investors, Codes and Standards on Corporate Governance	CO4, BTL1, BTL2	Conceptual lecture, Interactive Q&A
9	(CSR) & Corporate Philanthropy	CO4, BTL1, BTL2	Videos and documentaries, Brainstorming session
10	Strategic Planning and Corporate Social Responsibility	CO1, BTL1	Conceptual lecture, Interactive Q&A
11	Relationship of CSR with Corporate Sustainability	CO1, BTL1	Presentation by students, Interactive discussions
12	Consumer Protection Act	CO1, BTL1, BTL2	Presentation by students, Interactive discussions
13	Revision	CO1, BTL1	Recap through group presentations
14	Class Test		Written test
Unit 2: Human Values			
15	Meaning and Formation of Values and Human Values	CO2, BTL1, BTL2	Lecture with examples, Interactive discussion
16	Socialization	CO2, BTL1, BTL2	Lecture with examples, Interactive discussion





17	Types of Values	CO2, BTL1	Lecture with examples, Interactive discussion
18	Social Values, Aesthetic Values	CO2, BTL1, BTL2	Lecture with examples, Interactive discussion
19	Organisational Values,	CO2, BTL1, BTL2	Lecture with examples, Video
20	Spiritual Values, Value Crisis	CO2, BTL1, BTL2	Lecture with examples, Interactive discussion
21	concept of knowledge and wisdom	CO2, BTL1, BTL2	Lecture with examples, Interactive discussion
22	wisdom-based management	CO2, BTL1, BTL2	Lecture with examples, Interactive discussion
23	Concept of Karma and its kinds:	CO2, BTL1, BTL2	Lecture with stories, Small group discussions
24	Karma Yoga	CO2, BTL1, BTL2	Lecture with examples, Interactive discussion
25	Nishkam Karma, Sakam Karma.	CO2, BTL1, BTL2	Case-based discussion, Scenario planning
26	Revision		Mind-mapping exercise, Group quiz
27	Class Test		Written test
Unit 3: Business Ethics			
28	Concept and significance of Business Ethics in Organizational	CO3, BTL1,2,3	Lecture with examples, Interactive discussion
29	Approaches and Practices governing Ethical Decision Making	CO3, BTL1,2,3	Lecture with examples, Interactive discussion
30	Approaches and Practices governing Ethical Decision Making	CO3, BTL1,2,3	Lecture with examples, Interactive discussion
31	Codes of Ethics	CO3, BTL1, BTL2	Examples of codes, Activity: Drafting codes
32	Normative and descriptive ethical theories	CO3, BTL1,2	Lecture with examples, Interactive discussion
33	Normative and descriptive ethical theories	CO3, BTL1,2	Lecture with examples, Interactive discussion
34	Ethos of Vedanta in management	CO3, BTL1, BTL2	Lecture with examples, Interactive discussion
35	Role of various agencies in ensuring ethics in corporation	CO3, BTL1,2,3	Lecture with examples, Interactive discussion





36	Setting standards of ethical behaviour;	CO3, BTL1,2,3	Lecture with examples, Interactive discussion
37	Assessing ethical performance	CO3, BTL1,2	Lecture with examples, Interactive discussion
38	Revision		Mind-mapping exercise
39	Class Test		Written test
Unit 4: Ethical and Moral Issues in Business:			
40	Introduction to Ethical and Moral Issues in Business	CO4, BTL1,2	Lecture, Class discussion
41	Implications of moral issues in different functional areas of business (finance, HR, and marketing).	CO4, BTL1,2,3,4	Case study analysis
42	Whistle blowing; Marketing truth and advertising	CO4, BTL1,2,3,4	Case study
43	Manipulation and coercion	CO4, BTL1,2,3	Group presentations, Research assignments
44	Allocation of moral responsibility in advertising	CO4, BTL1,2	Lecture, Class discussion
45	Trade secrets, corporate disclosure Insider trading,	CO4, BTL1,2,3	Lecture, Class discussion
46	Equal employment opportunity, affirmative action	CO4, BTL1,2	Lecture, Class discussion
47	Preferential hiring; Consumerism; Environmental protection,	CO4, BTL1,2,3	Lecture, Class discussion
48	Revision		Mind-mapping exercise
49	Class Test		Written test





LECTURE PLAN

Paper	Paper Code	SEM	Paper Title	Credit
Elective	BA ECO (Hons) – 309	V	Applied Econometrics	05

Objective:

To provide students with essential econometric skills and knowledge that are directly applicable to their research endeavours, enhancing their ability to conduct meaningful and impactful studies.

Lecture no	UNIT-1 (K-Variable regression) – CO1	Pedagogy used
1	o Introduction (BTL 1: Remembering)	• Classroom Lectures: Explanation of fundamental concepts like CLRM assumptions, partial regression coefficients. • Interactive Problem-Solving: Use real-world data for hypothesis testing. • Hands-on Software Practice: In-class exercises using R-Studio for regression analysis to reinforce concepts. • Conducted quiz to reinforce key concepts (copy attached)
2	o CLRM Assumptions (BTL 2: Understanding)	
3	o Partial Regression Coefficient (BTL 3: Applying)	
4	o Multiple Linear Regression (BTL 4: Analysing)	
5	o Practice Questions (BTL 3: Applying)	
6	o Practice Questions (BTL 3: Applying)	
7	o Practice Questions (BTL 3: Applying)	
	UNIT 2: Regression Diagnostics - CO 2	
	AUTOCORRELATION	• Problem-Based Learning: Use case studies and real data to explain the causes, consequences, and detection methods for autocorrelation, multicollinearity, and heteroskedasticity. • Class Discussions: Interactive Q&A sessions to help students understand regression diagnostics concepts. • Lab Exercises: Detection and remedial measures can be taught
8	Meaning and Causes –(BTL 2: Understanding)	
9	Consequences –(BTL 2: Understanding)	
10	Method of Detection- (BTL 3: Applying)	
11	Method of Detection - (BTL 3: Applying)	
12	Remedial Measures - (BTL 3: Applying)	
	MULTICOLLINEARITY	
13		





14	Introduction and Causes- (BTL 2: Understanding)	using R programming in lab sessions.
15		
16	Consequences- (BTL 2: Understanding)	
17	Method of Detection- (BTL 3: Applying)	
18	Method of Detection- (BTL 3: Applying)	
	Test- (BTL 3: Applying)	
19	Remedial Measures- (BTL 3: Applying)	
20	MULTICOLLINEARITY	
21	Meaning and Causes-(BTL 2: Understanding)	
22	Consequences-(BTL 2: Understanding)	
23	Method of Detection- (BTL 3: Applying)	
24	Method of Detection- (BTL 3: Applying)	
	Remedial Measures- (BTL 3: Applying)	
	Practice Question- (BTL 3: Applying)	
	UNIT-3 (Panel Data)	
25	Introduction & Features-(BTL 2: Understanding)	• Interactive Lectures: Use slides and real examples to introduce panel data and explain models like Pooled OLS, LSDV. • Group Work: Encourage students to work in teams to analyse panel data using R-Studio. • Quizzes and Tests: Regular tests and quizzes to check understanding of panel data concepts like the Hausman test.
26		
27	Pooled OLS model- (BTL 3: Applying)	
28	Pooled OLS model- (BTL 3: Applying)	
29	Within and Between Estimators- (BTL 3: Applying)	
30	LSDV model- (BTL 4: Analysing)	
31	LSDV Model- (BTL 4: Analysing)	
32	Fixed Effect model(BTL 4: Analysing)	
33	Random Effect- (BTL 4: Analysing)	
34	Hausman Test- (BTL 4: Analysing)	
	Test- (BTL 3: Applying)	
	UNIT-4 (Time Series)	
35	Introduction-(BTL 2: Understanding)	





36	Univariate model–(BTL 2: Understanding)	• Simulation and Data Visualization: Use time-series plots to show stationarity and unit root problems. • Lab-Based Learning: Perform ADF tests and build ARMA models using R in lab sessions. • Research Papers: Apply time-series analysis on financial or economic data, helping students to link theory with real-world applications.
37	Concept of Stationarity–(BTL 2: Understanding)	
38		
39	Problem of Unit Root(BTL 3: Applying)	
40	Augmented Dickey Fuller Test(BTL 3: Applying)	
41	Augmented Dickey Fuller Test(BTL 3: Applying)	
42	Auto-Regressive Model(BTL4: Analysing)	
43	Application AR Model(BTL4: Analysing)	
44	MA model(BTL4: Analysing)	
	ARMA model(BTL4: Analysing)	
45-48	R-Programming lab (BTL 3: Applying, BTL4: Analysing)	• Hands-On Learning: Conduct R-Studio lab sessions for data analysis, model building, and testing. • Guided Practice: Provide datasets and step-by-step guidance for performing econometric analysis using R.





Lesson Plan

BA ECO (Hons)			
Guru Gobind Singh Indraprastha University			
Paper	Paper Code	Paper Title	Credit
Core	BA ECO (hons) – 309 (V - Semester)	Applied Econometrics	05
Number of Lecture Hours / Week		04	
Total Number of Lecture Hours		48	

Teaching Pedagogy and Delivery Mechanism:

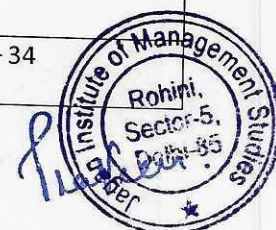
- **Hands-on Learning with Software:** Use R-Studio to work on real-world data, helping students see how econometrics applies to actual problems.
- **Flipped Classroom:** Share videos or readings before class so students can spend class time solving problems and discussing ideas.
- **Simulations and Visuals:** Show data visualizations and run simulations to make complex ideas easier to understand.

Recommended Readings:

- Wooldridge, J. M. (2022). Introductory econometrics: A modern approach (7th ed.). Cengage Learning.
- Stock, J. H., & Watson, M. W. (2020). Introduction to econometrics (4th ed.). Pearson.
- Gujarati, D. N., & Porter, D. C. (2022). Essentials of econometrics (6th ed.). McGraw Hill.
- Dougherty, C. (2021). Introduction to econometrics (5th ed.). Oxford University Press.

Teaching Outline

UNITS	CONTENTS	SESSIONS
UNIT-1 K variable regression CO-1	• Introduction • OLS Parameter Estimation • Properties • Parameter Estimation • Partial Regression Coefficients • Hypothesis Testing – Individual and Joint • Practice questions	1 – 7
UNIT-2 Diagnostic Check	• Heteroscedastic • Autocorrelation • Multicollinearity • Test	8 – 24
UNIT 3 – Panel Data	• Introduction to Panel Data	25 – 34





Jagan Institute of Management Studies **jims**

NAAC A++ Grade & NBA Accredited MCA Program

3, Institutional Area, Sector-5, Rohini, Delhi-110085

	• Within and Between Estimators • LSDV Model • Random Effect • Fixed effect • Hausman Test	
UNIT-4 Time series Analysis	• Introduction • Stationary Data • Problem of Unit Root • Dickey Fuller Test • AR models	35-44
R-studio Lab	LAB SESSIONS	45-48

