



# AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING



Approved by All India Council for Technical Education, New Delhi  
Affiliated to Anna University, Chennai  
NAAC Accredited Institution & NBA Accredited Courses (Mech. Engg., ECE, CSE, IT)  
"Nizara Educational Campus" Muthapudupet, Avadi-IAF, Chennai - 55.

## **B.E. CSE - ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

### **CO-PO-PSO MAPPING**

#### **GE3151 PROBLEM SOLVING AND PYTHON PROGRAMMING**

#### **LIST OF COURSE OUTCOMES**

- CO1:** Develop algorithmic solutions to simple computational problems.  
**CO2:** Develop and execute simple Python programs.  
**CO3:** Write simple Python programs using conditionals and loops for solving problems.  
**CO4:** Decompose a Python program into functions.  
**CO5:** Represent compound data using Python lists, tuples, dictionaries etc.  
**CO6:** Read and write data from/to files in Python programs.

#### **CO –PO-PSO MAPPING**

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	3	3	3	2	-	-	-	-	-	2	2	3	3	-
2	3	3	3	3	2	-	-	-	-	-	2	2	3	-	-
3	3	3	3	3	2	-	-	-	-	-	2	-	3	-	-
4	2	2	-	2	2	-	-	-	-	-	1	-	3	-	-
5	1	2	-	-	1	-	-	-	-	-	1	-	2	-	-
6	2	2	-	-	2	-	-	-	-	-	1	-	2	-	-
Avg.	2	3	3	3	2	-	-	-	-	-	2	2	3	3	-



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## CO-PO-PSO MAPPING

### GE3171 PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY

#### LIST OF COURSE OUTCOMES

- CO1:** Develop algorithmic solutions to simple computational problems  
**CO2:** Develop and execute simple Python programs.  
**CO3:** Implement programs in Python using conditionals and loops for solving problems.  
**CO4:** Deploy functions to decompose a Python program.  
**CO5:** Process compound data using Python data structures.  
**CO6:** Utilize Python packages in developing software applications.

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	3	3	3	2	-	-	-	-	-	2	2	3	3	-
2	3	3	3	3	2	-	-	-	-	-	2	2	3	-	-
3	3	3	3	3	2	-	-	-	-	-	2	-	3	-	-
4	2	2	-	2	2	-	-	-	-	-	1	-	3	-	-
5	1	2	-	-	1	-	-	-	-	-	1	-	2	-	-
6	2	2	-	-	2	-	-	-	-	-	1	-	2	-	-
Avg.	2	3	3	3	2	-	-	-	-	-	2	2	3	3	-



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## CO-PO-PSO MAPPING

### CS3251 PROGRAMMING IN C

#### LIST OF COURSE OUTCOMES

**CO1:** Demonstrate knowledge on C Programming constructs.

**CO2:** Develop simple applications in C using basic constructs.

**CO3:** Design and implement applications using arrays and strings.

**CO4:** Develop and implement modular applications in C using functions.

**CO5:** Develop applications in C using structures and pointers.

**CO6:** Design applications using sequential and random-access file processing.

#### CO -PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	1	1	-	2	-	-	-	-	-	-	1	2	2	-
2	1	-	2	1	3	-	-	-	-	-	-	1	3	1	-
3	1	2	2	2	3	-	-	-	-	-	-	1	2	1	-
4	2	1	1	1	2	-	-	-	-	-	-	-	2	-	-
5	1	-	2	2	2	-	-	-	-	-	-	2	3	1	-
6	2	1	1	1	3	-	-	-	-	-	-	-	1	2	-
Avg.	2	1	2	1	3	-	-	-	-	-	-	1	2	1	-



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## CO-PO-PSO MAPPING

### CS3271 PROGRAMMING IN C LABORATORY

#### LIST OF COURSE OUTCOMES

**CO1:** Demonstrate knowledge on C programming constructs.

**CO2:** Develop programs in C using basic constructs.

**CO3:** Develop programs in C using arrays.

**CO4:** Develop applications in C using strings, pointers, functions.

**CO5:** Develop applications in C using structures.

**CO6:** Develop applications in C using file processing.

#### CO -PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1	3	3	1	1	1	-	-	2	1	2	2	2	2	-
2	2	3	3	2	1	1	-	-	2	1	2	2	2	3	-
3	2	2	2	1	1	2	-	-	2	-	2	2	2	2	-
4	2	2	2	2	1	2	-	-	3	-	3	3	3	2	-
5	2	2	3	2	3	2	-	-	3	-	3	3	3	3	-
Avg.	2	2	3	2	1	2	-	-	2	1	2	2	2	2	-



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## CO-PO-PSO MAPPING

### MA3354 DISCRETE MATHEMATICS

#### LIST OF COURSE OUTCOMES

**CO1:** Have knowledge of the concepts needed to test the logic of a program.

**CO2:** Have an understanding in identifying structures on many levels.

**CO3:** Be aware of a class of functions which transform a finite set into another finite set which relates to input and output functions in computer science.

**CO4:** Be aware of the counting principles.

**CO5:** Be exposed to concepts and properties of algebraic structures such as groups, rings and fields.

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	3	2	-	-	-	-	-	-	-	-	2	-	-	-
2	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	3	2	-	-	2	-	-	-	3	-	-	-	-	-
4	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-
5	-	2	2	2	-	-	-	-	-	2	-	-	-	-	-
Avg.	1	3	2	1	-	-	-	-	-	1	-	-	-	-	-



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## CO-PO-PSO MAPPING

### CS3351 DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION

#### LIST OF COURSE OUTCOMES

**CO1:** Design various combinational digital circuits using logic gates.

**CO2:** Design sequential circuits and analyze the design procedures.

**CO3:** State the fundamentals of computer systems and analyze the execution of an instruction.

**CO4:** Analyze different types of control design and identify hazards.

**CO5:** Identify the characteristics of various memory systems and I/O communication.

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	3	3	3	3	2	1	1	1	1	2	3	2	3	3
2	3	3	3	3	2	1	1	1	1	1	2	3	1	2	2
3	3	3	3	3	2	2	1	1	1	1	2	3	2	3	1
4	3	3	3	3	1	1	1	1	1	1	1	2	1	3	1
5	3	3	3	3	1	2	1	1	1	1	1	2	1	2	1
Avg.	3	3	3	3	1	2	1	1	1	1	1	2	1	2	1



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## CO-PO-PSO MAPPING

### CS3352 FOUNDATION OF DATA SCIENCE

#### LIST OF COURSE OUTCOMES

**CO1:** Define the data science process

**CO2:** Understand different types of data description for data science process

**CO3:** Gain knowledge on relationships between data

**CO4:** Use the Python Libraries for Data Wrangling

**CO5:** Apply visualization Libraries in Python to interpret and explore data

#### CO-PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	2	1	2	2	-	-	-	1	1	1	2	2	2	-
2	2	1	-	1	1	-	-	-	2	1	1	2	2	3	-
3	2	2	1	2	2	1	1	-	1	2	1	3	2	2	-
4	3	2	2	1	2	-	-	-	1	1	2	2	3	3	-
5	2	2	1	2	2	-	-	-	1	1	1	2	2	2	-
Avg.	2	2	1	2	2	1	1	-	1	1	1	2	2	2	-



## CO-PO-PSO MAPPING

### CD3291 DATA STRUCTURES AND ALGORITHMS

#### LIST OF COURSE OUTCOMES

- CO1:** Explain abstract data types
- CO2:** Design, implement, and analyze linear data structures, such as lists, queues, and stacks, according to the needs of different applications
- CO3:** Design, implement, and analyze efficient tree structures to meet requirements such as searching, indexing, and sorting
- CO4:** Model problems as graph problems and implement efficient graph algorithms to solve them

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1	2	2	2	1	-	-	-	2	-	2	1	1	1	-
2	2	3	2	3	2	-	-	-	2	-	2	2	3	2	-
3	2	2	3	3	3	-	-	-	3	-	2	2	3	2	-
4	3	3	3	2	1	-	-	-	3	-	2	2	3	2	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Avg.	2	3	3	3	2	-	-	-	3	-	2	2	3	2	-





## CO-PO-PSO MAPPING

### CS3391 OBJECT ORIENTED PROGRAMMING

#### LIST OF COURSE OUTCOMES

- CO1:** Apply the concepts of classes and objects to solve simple problems.  
**CO2:** Develop programs using inheritance, packages and interfaces.  
**CO3:** Make use of exception handling mechanisms and multithreaded model to solve real world problems.  
**CO4:** Build Java applications with I/O packages, string classes, Collections and generics concepts.  
**CO5:** Integrate the concepts of event handling and JavaFX components and controls for developing GUI based applications.

#### CO -PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	3	3	2	2	-	-	-	-	-	1	-	3	2	1
2	3	3	3	2	2	-	-	-	-	-	2	-	3	2	2
3	3	3	3	2	2	-	-	-	-	-	1	-	3	1	1
4	3	3	3	2	2	-	-	-	-	-	3	-	3	2	1
5	3	3	3	2	2	-	-	-	-	-	2	-	3	2	1
Avg.	3	3	3	2	2	-	-	-	-	-	2	-	3	2	1.2



## CO-PO-PSO MAPPING

### CS3361 DATA SCIENCE LABORATORY

#### LIST OF COURSE OUTCOMES

**CO1:** Make use of the python libraries for data science.

**CO2:** Make use of the basic Statistical and Probability measures for data science.

**CO3:** Perform descriptive analytics on the benchmark data sets.

**CO4:** Perform correlation and regression analytics on standard data sets.

**CO5:** Present and interpret data using visualization packages in Python.

#### CO -PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	2	1	1	-	-	-	-	1	3	3	3	-	-	-
2	3	2	2	3	1	-	-	-	3	1	3	2	2	2	-
3	3	2	1	3	1	-	-	-	2	1	1	1	2	2	-
4	2	3	1	3	-	-	-	-	2	3	2	3	2	2	-
5	1	2	3	1	1	-	-	-	2	1	3	1	2	2	-
Avg.	2	2	2	2	1	-	-	-	2	2	2	2	2	2	-



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## CO-PO-PSO MAPPING

### CS3381 OBJECT ORIENTED PROGRAMMING LABORATORY

#### LIST OF COURSE OUTCOMES

- CO1:** Design and develop java programs using object-oriented programming concepts.  
**CO2:** Develop simple applications using object-oriented concepts such as package, exceptions.  
**CO3:** Implement multithreading, and generics concepts.  
**CO4:** Create GUIs and event driven programming applications for real world problems.  
**CO5:** Implement and deploy web applications using Java.

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	1	2	1	-	-	-	-	1	2	2	2	1	2	3
2	2	1	3	1	-	-	-	-	2	3	3	2	1	3	1
3	2	2	1	2	1	-	-	-	1	2	1	3	2	3	2
4	2	2	1	3	-	-	-	-	3	1	1	1	2	1	2
5	1	3	3	1	3	-	-	-	1	1	1	1	2	1	2
Avg.	2	2	2	2	2	-	-	-	2	2	2	2	2	2	2



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## CO-PO-PSO MAPPING

### GE3361 PROFESSIONAL DEVELOPMENT

#### LIST OF COURSE OUTCOMES

- CO1:** Use MS Word to create quality documents, by structuring and organizing content for their day to day technical and academic requirements
- CO2:** Use MS EXCEL to perform data operations and analytics, record, retrieve data as per requirements and visualize data for ease of understanding
- CO3:** Use MS PowerPoint to create high quality academic presentations by including common tables, charts, graphs, interlinking other elements, and using media objects.



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## CO-PO-PSO MAPPING

### CS3452 THEORY OF COMPUTATION

#### LIST OF COURSE OUTCOMES

- CO1:** Construct automata theory using Finite Automata
- CO2:** Write regular expressions for any pattern
- CO3:** Design context free grammar and Pushdown Automata
- CO4:** Design Turing machine for computational functions
- CO5:** Differentiate between decidable and undecidable problems

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1	3	2	3	-	-	-	-	1	1	2	3	1	3	-
2	2	2	3	2	1	-	-	-	3	3	2	3	3	1	-
3	2	2	3	2	1	-	-	-	1	3	1	2	1	2	-
4	2	2	2	1	-	-	-	-	1	3	3	2	1	3	-
5	2	2	2	1	1	-	-	-	1	1	3	2	3	1	-
Avg.	2	2	2	2	1	-	-	-	1	2	2	2	2	2	-



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## CO-PO-PSO MAPPING

### AL3452 OPERATING SYSTEMS

#### LIST OF COURSE OUTCOMES

- CO1:** Analyze various scheduling algorithms and process synchronization.  
**CO2:** Explain deadlock, prevention and avoidance algorithms.  
**CO3:** Compare and contrast various memory management schemes.  
**CO4:** Explain the functionality of file systems I/O systems, and Virtualization  
**CO5:** Compare iOS and Android Operating Systems.

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	3	3	1	-	2	-	-	2	-	-	2	3	3	-
2	3	3	3	3	-	2	-	-	2	-	-	2	3	3	-
3	3	3	3	3	-	2	-	-	2	-	-	2	3	3	-
4	3	3	3	2	-	2	-	-	2	-	-	2	3	3	-
5	3	3	3	3	-	2	-	-	2	-	-	2	3	3	-
Avg.	3	3	3	2	-	2	-	-	2	-	-	2	3	3	-



## CO-PO-PSO MAPPING

### AD3391 DATABASE DESIGN AND MANAGEMENT

#### LIST OF COURSE OUTCOMES

- CO1:** Understand the database development life cycle and apply conceptual modeling
- CO2:** Apply SQL and programming in SQL to create, manipulate and query the database
- CO3:** Apply the conceptual-to-relational mapping and normalization to design relational database
- CO4:** Determine the serializability of any non-serial schedule using concurrency techniques
- CO5:** Apply the data model and querying in Object-relational and No-SQL databases.

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1	1	-	1	-	-	-	-	-	-	-	-	2	1	-
2	2	1	2	2	1	-	-	-	-	-	-	-	3	1	-
3	3	1	2	1	1	-	-	-	1	-	-	-	2	3	-
4	3	1	2	2	2	-	-	-	1	-	-	-	1	2	-
5	2	1	2	1	2	-	-	-	1	-	1	1	2	2	-
Avg.	2	1	2	1	1	-	-	-	1	-	-	-	2	2	-



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## CO-PO-PSO MAPPING

### AL3451 MACHINE LEARNING

#### LIST OF COURSE OUTCOMES

**CO1:** Explain the basic concepts of machine learning.

**CO2:** Construct supervised learning models.

**CO3:** Construct unsupervised learning algorithms.

**CO4:** Evaluate and compare different models

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	3	3	2	2	1	-	-	-	-	-	-	3	3	2
2	3	3	3	2	2	1	-	-	-	-	-	-	3	3	2
3	3	3	3	2	2	1	-	-	-	-	-	-	3	3	2
4	3	3	3	2	2	1	-	-	-	-	-	-	3	3	2
5	3	3	3	2	2	1	-	-	-	-	-	-	3	3	2
Avg.	3	3	3	2	2	1	-	-	-	-	-	-	3	3	2





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## CO-PO-PSO MAPPING

### AL3391 ARTIFICIAL INTELLIGENCE

#### LIST OF COURSE OUTCOMES

- CO1: Explain intelligent agent frameworks
- CO2: Apply problem solving techniques
- CO3: Apply game playing and CSP techniques
- CO4: Perform logical reasoning
- CO5: Perform probabilistic reasoning under uncertainty

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	1	2	2	-	-	-	-	3	2	3	1	1	2	2
2	2	2	3	1	1	-	-	-	2	1	1	2	2	1	2
3	1	3	2	2	1	-	-	-	2	2	1	1	1	2	2
4	1	3	3	3	-	-	-	-	1	2	1	2	1	3	2
5	3	1	2	1	1	-	-	-	3	2	3	2	2	2	1
Avg.	2	2	2	2	1	-	-	-	2	2	2	2	1	2	2



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## CO-PO-PSO MAPPING

### GE3451 ENVIRONMENTAL SCIENCES AND SUSTAINABILITY

#### LIST OF COURSE OUTCOMES

- CO1:** To recognize and understand the functions of environment, ecosystems and biodiversity and their conservation.
- CO2:** To identify the causes, effects of environmental pollution and natural disasters and contribute to the preventive measures in the society.
- CO3:** To identify and apply the understanding of renewable and non-renewable resources and contribute to the sustainable measures to preserve them for future generations.
- CO4:** To recognize the different goals of sustainable development and apply them for suitable technological advancement and societal development.
- CO5:** To demonstrate the knowledge of sustainability practices and identify green materials, energy cycles and the role of sustainable urbanization

#### CO -PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	1	-	-	-	2	3	-	-	-	-	2	-	-	-
2	3	2	-	-	-	3	3	-	-	-	-	2	-	-	-
3	3	-	1	-	-	2	2	-	-	-	-	2	-	-	-
4	3	2	1	1	-	2	2	-	-	-	-	2	-	-	-
5	3	2	1	-	-	2	2	-	-	-	-	1	-	-	-
Avg.	2.8	1.8	1	1	-	2.2	2.4	-	-	-	-	1.8	-	-	-



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## CO-PO-PSO MAPPING

### CS3461 OPERATING SYSTEMS LABORATORY

#### LIST OF COURSE OUTCOMES

- CO1:** Define and implement UNIX Commands.  
**CO2:** Compare the performance of various CPU Scheduling Algorithms.  
**CO3:** Compare and contrast various Memory Allocation Methods.  
**CO4:** Define File Organization and File Allocation Strategies.  
**CO5:** Implement various Disk Scheduling Algorithms.

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	1	3	1	1	-	-	-	1	3	3	3	2	1	3
2	3	1	1	2	2	-	-	-	3	2	1	1	3	1	2
3	3	3	2	1	2	-	-	-	3	3	1	2	2	2	2
4	1	2	2	3	2	-	-	-	3	1	3	1	1	2	1
5	2	2	1	1	3	-	-	-	1	2	2	3	1	3	3
Avg.	2	2	2	2	2	-	-	-	2	2	2	2	2	2	2



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## CO-PO-PSO MAPPING

### CS3481 DATABASE MANAGEMENT SYSTEMS LABORATORY

#### LIST OF COURSE OUTCOMES

- CO1:** Create databases with different types of key constraints.  
**CO2:** Construct simple and complex SQL queries using DML and DCL commands.  
**CO3:** Use advanced features such as stored procedures and triggers and incorporate in GUI based application development.  
**CO4:** Create an XML database and validate with meta-data (XML schema).  
**CO5:** Create and manipulate data using NOSQL database.

#### CO -PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	3	3	3	3	-	-	-	2	2	-	2	3	3	2
2	3	3	3	3	3	-	-	-	2	2	-	2	3	3	2
3	3	3	3	3	3	-	-	-	2	2	-	2	3	3	2
4	3	3	3	3	3	-	-	-	2	2	-	2	3	3	2
5	3	3	3	3	3	-	-	-	2	2	-	2	3	3	2
Avg.	3	3	3	3	3	-	-	-	2	2	-	2	3	3	2



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## CO-PO-PSO MAPPING

### CS3591 COMPUTER NETWORKS

#### LIST OF COURSE OUTCOMES

- CO1:** Explain the basic layers and its functions in computer networks.  
**CO2:** Understand the basics of how data flows from one node to another.  
**CO3:** Analyze routing algorithms.  
**CO4:** Describe protocols for various functions in the network.  
**CO5:** Analyze the working of various application layer protocols.

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	-	2	-	-		-	-	-	-	-	-	-	3	-	-
2	-	1	-	-	2	-	-	-	-	-	-	2	-	2	-
3	-	2	-	-	3	-	-	-	-	-	-	-	-	3	-
4	-		-	1	2	-	-	-	-	3	-	-	-	-	-
5	-	3	2	-	-	-	-	-	-	-	-	-	-	-	3
Avg.	-	1	-	-	1	-	-	-	-	1	-	-	-	1	1



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## CO-PO-PSO MAPPING

### CS3501 COMPILER DESIGN

#### LIST OF COURSE OUTCOMES

- CO1:** Understand the techniques in different phases of a compiler.  
**CO2:** Design a lexical analyser for a sample language and learn to use the LEX tool.  
**CO3:** Apply different parsing algorithms to develop a parser and learn to use YACC tool  
**CO4:** Understand semantics rules (SDT), intermediate code generation and run-time environment.  
**CO5:** Implement code generation and apply code optimization techniques.

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	3	3	3	-	-	-	-	3	3	1	3	2	3	2
2	3	3	3	3	3	-	-	-	3	2	3	2	2	1	2
3	3	3	2	2	3	-	-	-	3	1	1	1	2	2	3
4	3	2	2	1	1	-	-	-	2	3	2	3	1	2	1
5	3	3	3	2	1	-	-	-	2	1	1	3	2	1	2
Avg.	3.00	2.80	2.60	2.20	2.00	-	-	-	2.60	2.00	1.60	2.40	1.80	1.80	2.00



## CO-PO-PSO MAPPING

### CB3491 CRYPTOGRAPHY AND CYBER SECURITY

#### LIST OF COURSE OUTCOMES

- CO1:** Understand the fundamentals of networks security, security architecture, threats and vulnerabilities
- CO2:** Apply the different cryptographic operations of symmetric cryptographic algorithms
- CO3:** Apply the different cryptographic operations of public key cryptography
- CO4:** Apply the various Authentication schemes to simulate different applications.
- CO5:** Understand various cyber crimes and cyber security.

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	2	1	2	2	-	-	-	1	-	-	1	2	3	3
2	3	3	3	3	3	-	-	-	2	-	-	1	3	3	3
3	3	3	3	3	3	-	-	-	2	-	-	1	3	3	3
4	3	3	3	3	3	-	-	-	2	-	-	1	3	3	3
5	3	2	3	2	3	-	-	-	3	-	-	2	3	2	3
Avg.	3	2.6	2.6	2.6	2.8	-	-	-	2	-	-	1.2	2.8	2.8	3



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## CO-PO-PSO MAPPING

### CS3551 DISTRIBUTED COMPUTING

#### LIST OF COURSE OUTCOMES

- CO1:** Explain the foundations of distributed systems (K2)  
**CO2:** Solve synchronization and state consistency problems (K3)  
**CO3:** Use resource sharing techniques in distributed systems (K3)  
**CO4:** Apply working model of consensus and reliability of distributed systems (K3)  
**CO5:** Explain the fundamentals of cloud computing (K2)

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	2	3	3	1	-	-	-	2	1	3	3	2	1	1
2	1	3	2	1	2	-	-	-	2	2	2	2	1	3	2
3	2	2	1	3	3	-	-	-	3	2	1	1	1	2	1
4	1	2	2	3	1	-	-	-	3	3	2	1	3	1	1
5	3	3	1	2	3	-	-	-	3	3	3	1	3	2	3
Avg.	1.8	2.4	1.8	2.4	2	-	-	-	2.6	2.2	2.2	1.6	2	1.8	1.6





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## CO-PO-PSO MAPPING

### CCW331 BUSINESS ANALYTICS

#### LIST OF COURSE OUTCOMES

**CO1:** Explain the real-world business problems and model with analytical solutions.

**CO2:** Identify the business processes for extracting Business Intelligence

**CO3:** Apply predictive analytics for business fore-casting

**CO4:** Apply analytics for supply chain and logistics management

**CO5:** Use analytics for marketing and sales.

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	2	3	1	1	-	-	-	1	2	1	1	3	2	1
2	3	3	3	2	3	-	-	-	1	2	2	2	3	1	2
3	2	2	3	3	2	-	-	-	3	1	1	3	3	1	2
4	2	1	1	2	2	-	-	-	3	3	2	1	1	3	1
5	2	3	2	3	2	-	-	-	3	3	1	3	3	1	1
Avg.	2.2	2.2	2.4	2.2	2	-	-	-	2.2	2.2	1.4	2	2.6	1.6	1.4



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## CO-PO-PSO MAPPING

### CCS375 WEB TECHNOLOGIES

#### LIST OF COURSE OUTCOMES

- CO1:** Construct a basic website using HTML and Cascading Style Sheets
- CO2:** Build dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.
- CO3:** Develop server-side programs using Servlets and JSP.
- CO4:** Construct simple web pages in PHP and to represent data in XML format.
- CO5:** Develop interactive web applications.

#### CO –PO-PSO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	2	3	3	3	-	-	-	1	3	3	1	3	2	3
2	2	2	2	1	2	-	-	-	2	2	1	3	2	2	2
3	1	1	3	2	3	-	-	-	1	2	1	1	1	2	1
4	2	3	3	1	2	-	-	-	3	1	2	2	2	2	2
5	1	2	3	2	2	-	-	-	2	1	3	1	1	1	2
Avg.	1.8	2	2.8	1.8	2.4	-	-	-	1.8	1.8	2	1.6	1.8	1.8	2