Dr. B. C. Roy Engineering College, Durgapur

Department of Computer Science & Engineering

M. Tech in Computer Science & Engineering

Course Outcomes:

The Course Outcomes are basically what the students will be able to do on completion of these courses as per the curriculum. The Course Outcomes are furnished in the Table below:

Course Name	Course Outcomes
1st Semester	
Advanced Engineering Mathematics (PGCSE101)	CO1: Understand the concept of Numerical Analysis and Stochastic process CO2: Apply the concept linear algebra and Graph theory in real life problems. CO3: Understand the concept of complex variables, Combinatorics and application of optimization techniques. CO4: Learn and apply the concept of different transform like Fourier transform, Z transform, Hadamard transform.
Advanced Operating System (PGCSE102)	CO1: Understand the overview of UNIX system. CO2: Learn the concept of different system calls and process control. CO3: Learn and apply the concept UNIX process scheduling CO4: Understand the concept of UNIX memory management
Advanced Computer Architecture (PGCSE103)	CO1: Learn the evolution of modern Computer systems CO2: Analyze Performance Enhancement of Processor by Pipelining CO3: Learn Vector Processing CO4: Evaluate High Performance Computing CO5: Learn Embedded System and its Architecture CO6: Understand Reconfigurable Architecture and HDL(Hardware

	Describption Languages)
Advanced Algorithms (PGCSE104)	CO1: For a given algorithms analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms. CO2: Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it. For a given problems of dynamic-programming. CO3: Describe the greedy paradigm and explain when an algorithmic design situation calls for it. For a given problem develop the greedy algorithms. CO4: Understand the concept of backtracking and its application for standard example like NQueen Problem. CO5: Learn and apply the concept set and string problem like set cover and string matching problem. CO6: Understand the concept of different matching problem and theory of NP Completeness.
Advanced Soft Computing (PGCSE105)	CO1: To explain the fuzzy sets, fuzzy logic systems and its various applications in real life problem solving. CO2: To illustrate the concept of Artificial Neural Network and its applications. CO3: To discuss on the concept of Genetic Algorithm and its various applications. CO4: To elaborate the basics of Hybrid system.
Operating System Laboratory (PGCSE191)	CO1: To operate on UNIX / Linux operating system with various shell commands, including different kernel level activities and system calls. CO2: To develop and handle basic kernel module and its execution.
Advanced Programming Lab (PGCSE192)	CO1: For a given algorithms analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms. CO2: Describe the greedy paradigm and explain when an algorithmic design situation calls for it. For a given problem develop the greedy algorithms. CO3: Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Synthesize divide-and-conquer

	algorithms. Derive and solve recurrence relation.
	CO4: Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it. For a given problems of dynamic-programming.
	CO5: develop the dynamic programming algorithms, and analyze it to determine its computational complexity.
	CO6: For a given model engineering problem model it using graph and write the corresponding algorithm to solve the problems.
	CO7: Explain the ways to analyze randomized algorithms (expected running time, probability of error).
Seminar – Based on literature survey (PGCSE193)	CO1: To identify various real world problems. CO2: To develop and enhance leadership skills. CO3: To improving communication skills, presentation skills and other soft skills.
2nd Semester	
Advanced DBMS (PGCSE201)	CO1: For a given query write relational algebra expressions for that query and optimize the developed expressions and the requirement design the databases using E R method and normalization.
	CO2: For a given transaction-processing system, determine the transaction atomicity, consistency, isolation, and durability.
	CO3: Understanding the concept of Distributed DBMS and its administration.
	CO4: For a given specification construct the SQL queries for Open source and Commercial DBMS -MYSQL, ORACLE, and DB2.
Advanced Computer Network & Security (PGCSE202)	CO1: To illustrate the basic concepts of computer network and security CO2: Learn the concept of different wireless mesh networks CO3: Understand the concept energy management and security related algorithms.
Theory of Computation (PGCSE203)	CO1: Define a system and recognize the behavior of a system. They will be able to minimize a system and compare different systems.
	CO2: Convert Finite Automata to regular expression. Students will be able to check equivalence between regular linear grammar and FA.

	CO3: Minimize context free grammar. Student will be able to check equivalence of CFL and PDA. CO4: They Will be able to design Turing Machine. CO5: Design Turing machine.
Soft Computing (PGCSE204)	CO1: To illustrate the basic concept of Soft computing and its evolution CO2: To illustrate the concept of Artificial Neural Network and its applications. CO3: To discuss on the concept of Genetic Algorithm and its various applications. CO4: To explain the fuzzy sets, fuzzy logic systems and its various applications in real life problem solving. CO5: To elaborate the basics of Hybrid system.
Distributed System Principle (PGCSE205)	CO1: Understand the concept of Distributed Computing System. CO2: To learn different Clock algorithm. CO3: Understand the concept of Distributed Mutual Exclusion and RPC.
Computer Networking & DBMS Laboratory (PGCSE291)	CO1: To write socket programming for UDP, TCP and sliding window protocols. CO2: To conduct experiments on simulators for MAC and routing protocols. CO3: To implement data link layer flow control and error control mechanisms. CO4: To create database, perform basic operation like insertion, deletion, and updation. CO5: To retrieve data from the database through query languages like SQL. CO6: To configure a database at the background of a high level program using front end tools and forms.
Seminar – Term paper leading to project (PGCSE292)	CO1: To understand the concept of literature survey. CO2: To learn different modern research area.
3rd Semester	
Teaching & Research Methodologies	CO1: To illustrate class management technique. CO2: To learn types and paradigm of research.

(PGCSE301)	CO3: To understand problem formulation and solving.
	CO4: To learn how to write reports.
Data Mining & Data Ware Housing (PGCSE302)	CO1: Study of different sequential pattern algorithms
	CO 2: Study the technique to extract patterns from time series data and it application in real world.
	CO3: Can extend the Graph mining algorithms to Web mining
	CO4: Help in identifying the computing framework for Big Data
Project – Part 1 (PGCSE391)	CO1: To conduct survey on the work done in the chosen domain. CO2: To formulate the problem out of the survey. CO3: To propose some technique towards the solution of the problem defined.
4th Semester	
Project – Part 2 (PGCSE491)	CO1: To apply advanced programming techniques in identified real world problems. CO2: To analyze the utilies of solutions. CO3: To carry out technical report/thesis writing.
Comprehensive Viva Voice (PGCSE492)	CO1: To evaluate overall technical knowledge and industry readiness. CO2: To go under a virtual environment of technical interview. CO3: To analyze various application of computer science in real life problem solving.