

Bengal College of Engineering and Technology

CO – PO – PSO MAPPING

Course Outcome – Program Outcome Mapping

Department of Information Technology

Programme Outcomes (POs)

Department of Information Technology

PO1: Engineering Knowledge

Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization to develop solutions of complex engineering problems.

Bloom's Taxonomy Levels:

Remember (L1) → Understand (L2) → Apply (L3)

PO2: Problem Analysis

Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development.

Bloom's Taxonomy Levels:

Understand (L2) → Analyze (L4) → Evaluate (L5)

PO3: Design/Development of Solutions

Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for public health, safety, whole-life cost, net zero carbon, culture, society and environment.

Bloom's Taxonomy Levels:

Apply (L3) → Analyze (L4) → Create (L6)

PO4: Conduct Investigations of Complex Problems

Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions.

Bloom's Taxonomy Levels:

Apply (L3) → Analyze (L4) → Evaluate (L5)

PO5: Engineering Tool Usage

Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling, recognizing their limitations to solve complex engineering problems.

Bloom's Taxonomy Levels:

Apply (L3) → Analyze (L4) → Create (L6)

Bengal College of Engineering and Technology

Department of Information Technology — B.Tech. in Information Technology

CO – PO – PSO Mapping

PO6: The Engineer and The World

Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment.

Bloom's Taxonomy Levels:

Understand (L2) → Analyze (L4) → Evaluate (L5)

PO7: Ethics

Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws.

Bloom's Taxonomy Levels:

Understand (L2) → Apply (L3) → Evaluate (L5)

PO8: Individual and Collaborative Team Work

Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

Bloom's Taxonomy Levels:

Apply (L3) → Analyze (L4) → Evaluate (L5)

PO9: Communication

Communicate effectively and inclusively within the engineering community and society at large, including writing effective reports, design documentation and effective presentations.

Bloom's Taxonomy Levels:

Apply (L3) → Evaluate (L5) → Create (L6)

PO10: Project Management and Finance

Apply knowledge and understanding of engineering management principles and economic decision-making; manage projects in multidisciplinary environments.

Bloom's Taxonomy Levels:

Understand (L2) → Apply (L3) → Analyze (L4)

PO11: Life-Long Learning

Recognize the need for, and have the preparation and ability for independent and life-long learning, adaptability to new and emerging technologies, and critical thinking.

Bloom's Taxonomy Levels:

Understand (L2) → Apply (L3) → Evaluate (L5)

Programme Specific Outcomes (PSOs) Proposed

Department of Information Technology

PSO1: Analytical and Scientific Problem Solving

Graduates will be able to apply scientific reasoning and core computing principles to analyze, model, and solve complex problems with a strong analytical foundation.

Bloom's Taxonomy Levels:

Understand (L2) → Apply (L3) → Analyze (L4)

NBA/NAAC Alignment:

- Supports NAAC Criteria 2 (Teaching–Learning) and Criteria 3 (Research & Innovation)

PSO2: Technology Development and Innovation

Graduates will be able to design and develop efficient, scalable, and sustainable solutions using modern tools and emerging technologies to address real-world challenges.

Bloom's Taxonomy Levels:

Apply (L3) → Analyze (L4) → Create (L6)

NBA/NAAC Alignment:

- Supports NAAC Criteria 3 (Innovation) and Criteria 4 (Infrastructure & ICT)

PSO3: Professional Skills, Ethics, and Lifelong Learning

Graduates will be able to demonstrate ethical responsibility, teamwork, and effective communication, while engaging in continuous learning and contributing responsibly to society and professional practice.

Bloom's Taxonomy Levels:

Apply (L3) → Evaluate (L5) → Create (L6)

NBA/NAAC Alignment:

- Supports NAAC Criteria 5 (Student Development) and Criteria 7 (Institutional Values & Best Practices)

First Year

Semester I

BS-M101 — Mathematics – IA

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 3 | – | – | – | – | – | – | 3 | 3 | 2 | – |
| CO2 | 3 | 3 | 3 | 3 | – | – | – | – | – | – | 3 | 3 | 2 | – |
| CO3 | 3 | 3 | 3 | 2 | – | – | – | – | – | – | 3 | 3 | 3 | 3 |
| CO4 | 3 | 1 | 2 | 1 | – | – | – | – | – | 1 | 3 | 3 | 2 | – |
| CO5 | 2 | 2 | 2 | 2 | – | – | – | – | – | 2 | 3 | 3 | 3 | 3 |
| AVG | 2.8 | 2.4 | 2.6 | 2.2 | 0 | 0 | 0 | 0 | 0 | 1.5 | 3 | 3 | 2.4 | 3 |

BS-PH101 — Physics – I

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 2 | 1 | – | – | – | – | – | – | – | – | 3 | 2 | – |
| CO2 | 1 | 3 | 2 | – | – | – | – | – | – | – | – | 3 | 2 | – |
| CO3 | 3 | 2 | 1 | 1 | – | – | – | – | – | – | – | 3 | 2 | 3 |
| CO4 | 1 | 3 | 2 | – | – | – | – | – | – | – | – | 3 | – | 3 |
| CO5 | 1 | 3 | 2 | 0 | – | – | – | – | – | – | – | 3 | – | 3 |
| AVG | 1.8 | 2.6 | 1.6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 3 |

ES-EE101 — Basic Electrical Engineering

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|------------|-----|------|------|------|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 2 | – | – | 2 | – | – | – | – | – | – | 3 | 2 | 3 |
| CO2 | 2 | 3 | 3 | 2 | 2 | – | – | – | – | – | – | 3 | 2 | – |
| CO3 | 2 | – | 3 | 1 | – | – | – | – | – | – | 1 | 3 | 2 | – |
| CO4 | 2 | – | 2 | 2 | 3 | – | – | – | – | – | 2 | 3 | 3 | 3 |
| CO5 | 2 | 2 | – | 2 | 3 | – | – | – | – | – | 1 | 2 | 3 | 3 |
| AVG | 2.2 | 2.34 | 2.67 | 1.75 | 2.5 | 0 | 0 | 0 | 0 | 0 | 1.34 | 2.8 | 2.4 | 3 |

BS-PH191 — Physics – I Laboratory

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | 3 | 1 | 1 | – | – | – | – | – | – | – | 3 | 2 | – |
| CO2 | 2 | 3 | 1 | 1 | – | – | – | – | – | – | – | 3 | 3 | 3 |
| CO3 | 2 | 2 | 3 | 1 | – | – | – | – | – | – | – | 3 | 2 | 2 |
| CO4 | 2 | 3 | 1 | 2 | – | – | – | – | – | – | – | 3 | 3 | 3 |
| CO5 | 2 | 2 | 3 | 1 | – | – | – | – | – | – | – | 3 | 2 | 3 |
| AVG | 2 | 2.6 | 1.8 | 1.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2.4 | 2.6 |

Bengal College of Engineering and Technology
 Department of Information Technology — B.Tech. in Information Technology
CO – PO – PSO Mapping

ES-EE191 — *Basic Electrical Engineering Lab*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|------|-----|------|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | – | – | – | 3 | – | – | 2 | – | – | – | 2 | 2 | 3 |
| CO2 | 2 | 3 | 3 | 1 | 2 | – | – | 3 | – | – | – | 2 | 3 | – |
| CO3 | 2 | 2 | 3 | – | – | – | – | 2 | – | – | – | 3 | 2 | – |
| CO4 | 2 | – | 2 | – | 3 | – | – | 3 | – | – | – | 3 | 3 | – |
| CO5 | 1 | – | – | – | 1 | – | – | – | – | – | – | 3 | 3 | – |
| AVG | 1.8 | 2.5 | 2.67 | 1 | 2.25 | 0 | 0 | 2.5 | 0 | 0 | 0 | 2.6 | 2.6 | 3 |

ES-ME192 — *Workshop*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|------|------|------|------|------|
| CO1 | 1 | – | – | – | – | – | – | – | – | – | – | 2 | 2 | – |
| CO2 | 1 | – | – | – | – | 1 | 1 | – | – | – | – | 2 | 3 | 3 |
| CO3 | 1 | – | – | – | – | 1 | 1 | 1 | – | – | – | 2 | 3 | – |
| CO4 | 1 | – | – | – | – | – | – | 2 | 1 | 1 | – | 2 | 2 | – |
| CO5 | 1 | – | – | – | – | – | – | 2 | 1 | 1 | 1 | 3 | 3 | 3 |
| AVG | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1.67 | 1 | 1 | 1 | 2.2 | 2.6 | 3 |

Bengal College of Engineering and Technology

Department of Information Technology — B.Tech. in Information Technology

CO – PO – PSO Mapping

Semester II

ES-CS201 — Programming for Problem Solving

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | – |
| CO2 | 3 | 3 | 3 | 3 | – | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 2 |
| CO3 | 3 | 3 | 3 | 3 | – | – | – | 1 | 1 | – | 2 | 3 | 3 | – |
| CO4 | 3 | 3 | 3 | 3 | – | – | – | 1 | 1 | – | 2 | 3 | 3 | – |
| CO5 | 3 | 3 | 3 | 3 | – | – | – | 1 | 1 | – | 2 | 3 | 3 | 3 |
| AVG | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 2.5 |

BS-CH 201 — Chemistry – I

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 2 | 3 | 1 | – | – | – | – | – | – | 3 | 3 | 2 | – |
| CO2 | 2 | 2 | 3 | 1 | – | – | – | – | – | – | 3 | 3 | 2 | 2 |
| CO3 | 3 | 3 | 3 | 1 | – | – | – | – | – | – | 3 | 3 | 2 | – |
| CO4 | 3 | 2 | 3 | 2 | – | – | – | – | – | 1 | 3 | 3 | 2 | 2 |
| CO5 | 3 | 2 | 3 | 2 | – | – | – | – | – | 2 | 3 | 3 | – | – |
| AVG | 2.8 | 2.2 | 3 | 1.4 | 0 | 0 | 0 | 0 | 0 | 1.5 | 3 | 3 | 2 | 2 |

BS-M201 — Mathematics – IIA

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 2 | 1 | 1 | – | – | – | – | – | – | – | 3 | 2 | – |
| CO2 | 3 | 2 | 1 | – | – | – | – | – | – | – | – | 3 | 2 | 2 |
| CO3 | 3 | 2 | 1 | 1 | – | – | – | – | – | – | – | 3 | 2 | – |
| CO4 | 3 | 2 | 1 | 1 | – | – | – | – | – | – | – | 3 | 2 | 3 |
| CO5 | 3 | 1 | 1 | – | – | – | – | – | – | – | – | 3 | 2 | – |
| AVG | 3 | 1.8 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 2.5 |

HM-HU201 — English

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | – | 3 | – | 2 | – | – | 3 |
| CO2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | – | 3 | – | 2 | – | – | 3 |
| CO3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | – | 3 | – | 2 | – | – | 3 |
| CO4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | – | 3 | – | 2 | – | – | 3 |
| CO5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | – | 3 | – | 2 | – | – | 3 |
| AVG | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 3 | 0 | 2 | – | – | 3 |

BS-CH291 — Chemistry – I Laboratory

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 1 | 1 | 2 | 3 | – | – | – | – | – | – | – | 3 | 2 | 2 |
| CO2 | 1 | 1 | 2 | 3 | – | – | – | – | – | – | – | 3 | 2 | – |
| CO3 | 1 | 1 | 2 | 3 | – | – | – | – | – | – | – | 3 | 2 | 3 |
| CO4 | 1 | 2 | 2 | 3 | – | – | – | – | – | – | – | 3 | 2 | 2 |
| CO5 | 1 | 2 | 2 | 3 | – | – | – | – | – | – | – | 3 | 3 | 2 |
| AVG | 1 | 1.4 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2.2 | 2.2 |

Bengal College of Engineering and Technology
 Department of Information Technology — B.Tech. in Information Technology
CO – PO – PSO Mapping

ES-CS291 — *Programming for Problem Solving Lab*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | 2 | 2 | 2 | – | – | – | – | – | – | 2 | 2 | 3 | – |
| CO2 | 2 | 2 | 2 | 2 | – | – | – | – | – | – | 2 | 2 | 3 | 3 |
| CO3 | 2 | 2 | 2 | 2 | – | – | – | – | – | – | 2 | 3 | 3 | – |
| CO4 | 2 | 2 | 2 | 2 | – | – | – | – | – | – | 2 | 3 | 3 | 3 |
| CO5 | 2 | 2 | 2 | 2 | – | – | – | – | – | – | 2 | 2 | 3 | 3 |
| AVG | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2.4 | 3 | 3 |

ES-ME291 — *Engineering Graphics and Design*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|------|-----|-----|-----|-----|-----|------|-----|------|------|------|------|------|
| CO1 | 1 | 2 | – | – | – | – | – | – | – | – | – | 2 | 2 | – |
| CO2 | 1 | – | – | – | – | 1 | 1 | – | – | – | – | 2 | 2 | 3 |
| CO3 | 1 | 1 | – | – | – | 1 | 1 | 1 | – | – | – | 2 | 3 | – |
| CO4 | 1 | – | – | – | – | 1 | – | 2 | 1 | 1 | – | 2 | 3 | – |
| CO5 | 1 | 2 | – | – | – | – | – | 2 | 1 | 1 | 1 | 3 | 3 | – |
| AVG | 1 | 1.67 | 0 | 0 | 0 | 1 | 1 | 1.67 | 1 | 1 | 1 | 2.2 | 2.6 | 3 |

HM-HU291 — *Language Laboratory*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | – | 2 | – | – | 3 |
| CO2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | – | 2 | – | – | 3 |
| CO3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | – | 2 | – | – | 3 |
| CO4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | – | 2 | 2 | – | 3 |
| CO5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | – | 2 | – | – | 3 |
| AVG | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | 0 | 2 | 2 | – | 3 |

Second Year

Semester III

ESC 301 — Analog and Digital Electronics

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|------|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | – | – | – | – | – | – | – | – | – | 3 | 3 | 2 | – |
| CO2 | 3 | 3 | 2 | 2 | – | – | – | – | 1 | – | 3 | 3 | 3 | 2 |
| CO3 | 3 | 2 | 2 | 2 | 1 | – | – | – | 1 | – | 3 | 3 | 3 | – |
| CO4 | 3 | 3 | 3 | 2 | 3 | – | – | – | 1 | 1 | 3 | 3 | 2 | – |
| CO5 | 3 | 3 | 2 | 2 | 2 | – | – | – | – | 2 | 3 | 3 | 3 | 2 |
| AVG | 3 | 2.75 | 2.25 | 2 | 2 | 0 | 0 | 0 | 1 | 1.5 | 3 | 3 | 2.6 | 2 |

PCC-CS 301 — Data Structure and Algorithms

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 2 | – |
| CO2 | 3 | 3 | 3 | 3 | – | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 |
| CO3 | 3 | 3 | 3 | 3 | – | – | – | 1 | 1 | – | 2 | 3 | 3 | 3 |
| CO4 | 3 | 3 | 3 | 3 | – | – | – | 1 | 1 | – | 2 | 3 | 3 | – |
| CO5 | 3 | 3 | 3 | 3 | – | – | – | 1 | 1 | – | 2 | 3 | 3 | 2 |
| AVG | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 2.8 | 2.6 |

PCC-CS302 — Computer Organization

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 3 | 2 | – | – | – | – | – | – | 3 | 2 | – |
| CO2 | 3 | 3 | 3 | 3 | 3 | – | – | – | – | 1 | – | 3 | 3 | 3 |
| CO3 | 3 | 3 | 3 | 1 | 3 | – | – | – | – | 2 | – | 3 | 2 | – |
| CO4 | 3 | 2 | 3 | 3 | 2 | – | – | – | – | 1 | – | 3 | 2 | – |
| CO5 | 3 | 2 | 3 | 3 | – | – | – | – | – | 2 | 2 | 3 | 2 | – |
| AVG | 3 | 2.6 | 3 | 2.6 | 2.5 | 0 | 0 | 0 | 0 | 1.5 | 2 | 3 | 2.2 | 3 |

BSC 301 — Mathematics – III

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 2 | 1 | – | – | – | – | – | – | – | 3 | 2 | – |
| CO2 | 3 | 3 | 2 | 1 | – | – | – | – | – | – | – | 3 | 2 | 3 |
| CO3 | 3 | 3 | 2 | 1 | – | – | – | – | – | – | – | 3 | 2 | – |
| CO4 | 3 | 3 | 2 | 1 | – | – | – | – | – | – | – | 3 | 2 | 3 |
| CO5 | 3 | 2 | 2 | – | – | – | – | – | – | – | – | 3 | 3 | 2 |
| AVG | 3 | 2.8 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2.2 | 2.6 |

Bengal College of Engineering and Technology
 Department of Information Technology — B.Tech. in Information Technology
CO – PO – PSO Mapping

HSMC 301 — *Economics for Engineers*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | 2 | 2 | 2 | – | 2 | 1 | – | – | 3 | 1 | 3 | – | 2 |
| CO2 | 2 | 2 | 2 | 2 | – | 2 | 1 | – | – | 3 | 1 | 3 | – | 2 |
| CO3 | 2 | 2 | 2 | 2 | – | 2 | 1 | – | – | 3 | 1 | 3 | – | 2 |
| CO4 | 2 | 2 | 2 | 2 | – | 2 | 1 | – | – | 3 | 1 | 3 | – | 2 |
| CO5 | 2 | 2 | 2 | 2 | – | 2 | 1 | – | – | 3 | 1 | 3 | – | 2 |
| AVG | 2 | 2 | 2 | 2 | 0 | 2 | 1 | 0 | 0 | 3 | 1 | 3 | – | 2 |

ESC 391 — *Analog and Digital Electronics Lab*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|------|------|-----|------|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 1 | 1 | 0 | – | – | – | 1 | 3 | 3 | 2 | – |
| CO2 | 3 | 3 | 3 | 1 | 1 | 0 | – | – | 1 | 1 | 3 | 3 | 2 | – |
| CO3 | 3 | 3 | 3 | – | – | 0 | 1 | – | 1 | 1 | 3 | 2 | 3 | 3 |
| CO4 | 3 | 3 | 2 | 2 | 1 | 0 | 1 | 2 | 1 | 1 | 3 | 3 | 3 | – |
| CO5 | 3 | 2 | 1 | – | 2 | 0 | 2 | 2 | 1 | 1 | 3 | 3 | 3 | 3 |
| AVG | 3 | 2.8 | 2.4 | 1.34 | 1.25 | 0 | 1.34 | 2 | 1 | 1 | 3 | 2.8 | 2.6 | 3 |

PCC-CS391 — *Data Structure and Algorithm Lab*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 2 |
| CO2 | 3 | 2 | 3 | 3 | – | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | – |
| CO3 | 3 | 3 | 3 | 2 | – | – | – | 1 | 1 | – | 2 | 3 | 3 | 2 |
| CO4 | 3 | 2 | 3 | 3 | – | – | – | 1 | 1 | – | 2 | 3 | 3 | 2 |
| CO5 | 3 | 3 | 2 | 3 | – | – | – | 1 | 1 | – | 2 | 3 | 3 | 2 |
| AVG | 3 | 2.6 | 2.8 | 2.8 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2.6 | 3 | 2 |

PCC-CS392 — *Computer Organization Lab*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 2 | – |
| CO2 | 3 | 3 | 1 | 2 | 1 | – | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 2 |
| CO3 | 3 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 3 | 3 | 2 | 3 |
| CO4 | 3 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | – |
| CO5 | 3 | 3 | 3 | 2 | 3 | 1 | 2 | 2 | 2 | 1 | 3 | 3 | 3 | 3 |
| AVG | 3 | 3 | 2.2 | 2 | 2.2 | 1.5 | 2 | 2.4 | 2.4 | 1.6 | 2.6 | 3 | 2.6 | 2.6 |

PCC-CS393 — *IT Workshop*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|------|-----|-----|-----|------|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 2 | – | 1 | 1 | – | – | 1 | – | 3 | 2 | 3 | – |
| CO2 | 3 | 2 | 1 | – | 1 | 1 | 1 | – | 1 | – | 2 | 2 | 3 | 3 |
| CO3 | 3 | 3 | 3 | 1 | 3 | – | – | 2 | 1 | 1 | 2 | 2 | 3 | – |
| CO4 | 3 | 3 | 3 | 1 | 2 | – | 1 | 1 | – | 1 | 3 | 3 | 3 | 3 |
| CO5 | 3 | 3 | 3 | 2 | 3 | – | 1 | 2 | – | 1 | 3 | 2 | 3 | – |
| AVG | 3 | 2.8 | 2.4 | 1.34 | 2 | 1 | 1 | 1.67 | 1 | 1 | 2.6 | 2.2 | 3 | 3 |

Bengal College of Engineering and Technology
 Department of Information Technology — B.Tech. in Information Technology
CO – PO – PSO Mapping

Semester IV

PCC-CS401 — Discrete Mathematics

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|------|------|-----|------|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | – | – | 2 | 2 | – | – | – | – | 3 | 3 | 2 | – |
| CO2 | 3 | 3 | – | – | 3 | 3 | – | – | – | – | 3 | 3 | 2 | – |
| CO3 | 3 | 3 | 3 | 2 | 3 | – | – | – | – | – | 3 | 3 | 2 | 3 |
| CO4 | 3 | 3 | 1 | 3 | 2 | 2 | – | – | – | – | 3 | 3 | 2 | 2 |
| CO5 | 3 | 3 | 3 | 3 | – | – | – | – | – | – | 3 | 3 | 2 | – |
| AVG | 3 | 3 | 2.34 | 2.67 | 2.5 | 2.34 | 0 | 0 | 0 | 0 | 3 | 3 | 2 | 2.5 |

PCC-CS402 — Computer Architecture

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|------|------|-----|-----|------|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | – | 3 | 2 | – | 2 | – | – | – | – | – | 3 | 2 | – |
| CO2 | 2 | 2 | 2 | 1 | – | 2 | – | – | – | – | – | 3 | 3 | – |
| CO3 | 1 | 3 | 2 | 2 | 1 | 2 | – | – | – | – | – | 3 | 3 | 2 |
| CO4 | 2 | 3 | 2 | 2 | 1 | 2 | – | – | – | – | – | 3 | 3 | – |
| CO5 | – | 1 | 3 | 1 | 2 | 1 | – | – | – | – | 1 | 3 | 3 | 2 |
| AVG | 1.75 | 2.25 | 2.4 | 1.6 | 1.34 | 1.8 | 0 | 0 | 0 | 0 | 1 | 3 | 2.8 | 2 |

PCC-CS403 — Formal Language and Automata Theory

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 2 | 2 | – | – | – | – | – | 3 | 3 | 2 | – |
| CO2 | 3 | 3 | 2 | 2 | 2 | – | – | – | – | – | 3 | 3 | 3 | 1 |
| CO3 | 3 | 1 | 2 | 2 | 2 | – | – | – | – | – | 3 | 3 | 2 | – |
| CO4 | 3 | 2 | 2 | 2 | 3 | – | – | – | – | 1 | 3 | 3 | 3 | 2 |
| CO5 | 3 | 3 | 2 | 2 | 3 | – | – | – | – | 2 | 3 | 3 | 2 | – |
| AVG | 3 | 2.4 | 2.2 | 2 | 2.4 | 0 | 0 | 0 | 0 | 1.5 | 3 | 3 | 2.4 | 1.5 |

PCC-CS404 — Design and Analysis of Algorithms

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 2 | 3 | 1 | 2 | – | – | – | – | – | – | 3 | 2 | – |
| CO2 | 3 | 3 | 3 | 3 | 1 | – | – | – | – | – | – | 3 | 3 | – |
| CO3 | 3 | 3 | 3 | 3 | 2 | – | – | – | – | – | – | 3 | 3 | – |
| CO4 | 3 | 3 | 3 | 2 | 2 | – | – | – | – | – | – | 3 | 2 | 1 |
| CO5 | 3 | 3 | 3 | 1 | 1 | – | – | – | – | – | – | 3 | 2 | – |
| AVG | 3 | 2.8 | 3 | 2 | 1.6 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2.4 | 1 |

Bengal College of Engineering and Technology
 Department of Information Technology — B.Tech. in Information Technology
CO – PO – PSO Mapping

BSC 401 — Biology

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | – | 1 | 1 | – | – | 1 | – | – | – | – | – | 3 | – | 2 |
| CO2 | – | 2 | 2 | – | – | 2 | – | – | – | – | – | 3 | 2 | 2 |
| CO3 | – | – | – | – | – | 1 | – | – | – | – | – | 3 | 2 | – |
| CO4 | – | – | 1 | – | – | 1 | – | – | – | – | – | 3 | – | – |
| CO5 | – | – | 1 | – | – | 1 | – | – | – | – | – | 3 | 2 | – |
| AVG | 0 | 1.5 | 1.25 | 0 | 0 | 1.2 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 2 |

MC-401 — Environmental Sciences

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | – | 2 | 1 | – | – | 1 | – | – | – | – | – | 2 | – | 3 |
| CO2 | – | 2 | 1 | – | – | 1 | – | – | – | – | – | 2 | – | 3 |
| CO3 | – | 2 | 2 | – | – | 2 | – | – | – | – | – | 3 | – | 3 |
| CO4 | – | 2 | 1 | – | – | 1 | – | – | – | – | – | 3 | – | 3 |
| CO5 | – | 2 | 1 | – | – | 1 | – | – | – | – | – | 2 | – | 3 |
| AVG | 0 | 2 | 1.2 | 0 | 0 | 1.2 | 0 | 0 | 0 | 0 | 0 | 2.4 | – | 3 |

PCC-CS492 — Computer Architecture Lab

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | – | 2 | 2 | 1 | – | 0 | – | – | – | – | 2 | 3 | – |
| CO2 | 2 | 2 | 2 | 1 | 1 | – | 0 | – | – | – | – | 2 | 3 | – |
| CO3 | 2 | 1 | 2 | 2 | – | – | 0 | 1 | – | – | – | 3 | 3 | – |
| CO4 | 3 | 3 | 3 | 2 | – | – | 0 | 1 | – | – | – | 3 | 3 | – |
| CO5 | 3 | 2 | 2 | 1 | 1 | 2 | 0 | 1 | – | – | 1 | 3 | 3 | 3 |
| AVG | 2.6 | 2 | 2.2 | 1.6 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 2.6 | 3 | 3 |

PCC-CS494 — Design and Analysis Algorithm Lab

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 2 | 2 | 1 | – | – | – | 2 | 3 | 3 | 3 | – |
| CO2 | 3 | 3 | 2 | 2 | 2 | – | – | – | 1 | – | 3 | 3 | 3 | – |
| CO3 | 3 | 1 | 3 | 2 | 2 | 1 | – | – | – | – | 3 | 3 | 3 | – |
| CO4 | 3 | 2 | 2 | 2 | 3 | 2 | – | – | – | 1 | 3 | 3 | 3 | – |
| CO5 | 3 | 3 | 2 | 2 | 3 | – | 1 | – | – | 2 | 3 | 3 | 3 | 3 |
| AVG | 3 | 2.4 | 2.4 | 2 | 2.4 | 1.34 | 1 | 0 | 1 | 1.67 | 3 | 3 | 3 | 3 |

Third Year

Semester V

HSMC-501 — Introduction to Industrial Management

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|------|-----|------|-----|------|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | – | – | – | – | – | – | – | – | – | – | 2 | – | 3 |
| CO2 | – | 3 | 2 | – | 2 | – | – | – | – | – | – | 2 | – | 3 |
| CO3 | 2 | – | – | – | 3 | – | – | – | – | – | – | 2 | – | 3 |
| CO4 | – | – | 3 | – | – | – | – | – | – | – | – | 2 | 2 | 3 |
| CO5 | 2 | – | 2 | – | 2 | – | – | 1 | – | – | – | 2 | 2 | 3 |
| AVG | 2.34 | 3 | 2.34 | – | 2.34 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 2 | 3 |

PEC-IT501B — Artificial Intelligence

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | – | 3 | 2 | – | – | 2 | – | – | – | 3 | 2 | – |
| CO2 | 2 | 2 | 3 | 2 | 1 | – | – | – | – | – | – | 3 | 2 | – |
| CO3 | – | 2 | 2 | 1 | 2 | – | – | 2 | – | – | – | 3 | 3 | 2 |
| CO4 | 2 | 3 | 2 | 3 | 1 | – | – | 2 | – | – | – | 3 | 2 | – |
| CO5 | 3 | 1 | 2 | 3 | 3 | – | – | – | – | – | – | 3 | 3 | – |
| AVG | 2.5 | 2.2 | 2.25 | 2.4 | 1.8 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 2.4 | 2 |

MC-CS501 — Constitution of India

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | – | – | – | – | – | 2 | 2 | 3 | 1 | – | 2 | – | – | 3 |
| CO2 | – | – | – | – | – | 2 | 2 | 3 | 1 | – | 2 | – | – | 3 |
| CO3 | – | – | – | – | – | 2 | 2 | 3 | 1 | – | 2 | – | – | 3 |
| CO4 | – | – | – | – | – | 2 | 2 | 3 | 1 | – | 2 | – | – | 3 |
| CO5 | – | – | – | – | – | 2 | 2 | 3 | 1 | – | 2 | – | – | 3 |
| AVG | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 1 | 0 | 2 | – | – | 3 |

ESC501 — Software Engineering

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | 3 | 1 | 1 | – | – | – | – | – | – | – | 3 | 3 | – |
| CO2 | 1 | 2 | 2 | 1 | 1 | – | – | – | – | – | – | 3 | 3 | – |
| CO3 | 1 | 1 | 3 | 1 | 2 | – | – | – | – | – | – | 3 | 3 | – |
| CO4 | 1 | 1 | 3 | 1 | 2 | – | – | – | – | – | – | 2 | 2 | 3 |
| CO5 | 3 | 2 | 2 | 2 | 3 | – | – | – | – | – | – | 2 | 3 | – |
| AVG | 1.6 | 1.8 | 2.2 | 1.2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2.6 | 2.8 | 3 |

Bengal College of Engineering and Technology

Department of Information Technology — B.Tech. in Information Technology

CO – PO – PSO Mapping

PCC-CS501 — *Compiler Design*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 3 | 2 | – | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 1 |
| CO2 | 3 | 3 | 3 | 3 | 3 | 1 | – | 2 | 2 | 1 | 2 | 3 | 3 | 2 |
| CO3 | 3 | 3 | 3 | 1 | 3 | – | 1 | 3 | – | – | 2 | 3 | 3 | 2 |
| CO4 | 3 | 3 | 3 | 3 | – | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | – |
| CO5 | 3 | 3 | 3 | 3 | 2 | – | 3 | – | 2 | 2 | 2 | 3 | 3 | – |
| AVG | 3 | 3 | 3 | 2.6 | 2.5 | 1.5 | 2 | 2.5 | 2.5 | 1.75 | 2 | 3 | 3 | 1.6 |

PCC-CS502 — *Operating Systems*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 1 | 1 | 1 | – | 2 | 3 | 2 | 3 | – | 2 | 3 | 2 | 2 |
| CO2 | 3 | 2 | 1 | 1 | 2 | – | 3 | 3 | 1 | 1 | 3 | 3 | 2 | – |
| CO3 | 3 | 2 | 3 | 1 | 1 | – | 2 | 3 | 2 | 2 | 2 | 3 | 3 | 3 |
| CO4 | 3 | 3 | 3 | 2 | – | – | 3 | 3 | 2 | 2 | 2 | 3 | 3 | 2 |
| CO5 | 3 | 2 | 1 | 1 | 3 | – | 2 | 3 | 1 | 2 | 2 | 3 | 3 | – |
| AVG | 3 | 2 | 1.8 | 1.2 | 2 | 2 | 2.6 | 2.8 | 1.8 | 1.75 | 2.2 | 3 | 2.6 | 2.3 |

PCC-CS503 — *Object Oriented Programming*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 1 | 2 | – | – | 2 | – | – | 2 | 2 | 2 | 3 | 2 |
| CO2 | 3 | 3 | 1 | 3 | – | – | 1 | – | – | 2 | 2 | 2 | 3 | – |
| CO3 | 3 | 3 | 2 | 3 | – | – | 3 | – | – | 2 | 2 | 3 | 3 | – |
| CO4 | 3 | 3 | 2 | 3 | – | – | 3 | – | – | 2 | 2 | 2 | 3 | 3 |
| CO5 | 3 | 3 | – | 1 | – | – | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |
| AVG | 3 | 3 | 1.5 | 2.4 | 0 | 0 | 2.2 | 2 | 2 | 2 | 2 | 2.2 | 3 | 2.6 |

ESC591 — *Software Engineering Lab*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | 3 | 1 | 1 | – | – | – | – | – | – | – | 2 | 2 | – |
| CO2 | 1 | 2 | 2 | 1 | 1 | – | – | – | – | – | – | 2 | 3 | – |
| CO3 | 1 | 1 | 3 | 1 | 2 | – | – | – | – | – | – | 2 | 3 | 2 |
| CO4 | 1 | 1 | 3 | 1 | 2 | – | – | – | – | – | – | 2 | 3 | 2 |
| CO5 | 3 | 2 | 2 | 2 | 3 | – | – | – | – | – | – | 3 | 3 | 3 |
| AVG | 1.6 | 1.8 | 2.2 | 1.2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2.2 | 2.8 | 2.3 |

PCC-CS592 — *Operating System Lab*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 1 | 1 | – | – | – | – | – | 1 | 2 | 3 | – |
| CO2 | 3 | 3 | 3 | 2 | 3 | – | 2 | – | – | – | 2 | 2 | 3 | 2 |
| CO3 | 3 | 3 | 3 | 2 | 3 | – | 2 | 1 | – | – | 2 | 3 | 3 | 2 |
| CO4 | 3 | 3 | 3 | 2 | 3 | – | 2 | – | – | 1 | 2 | 3 | 3 | 2 |
| CO5 | 3 | 3 | 3 | 2 | 3 | – | 1 | 1 | – | 1 | 2 | 3 | 3 | – |
| AVG | 3 | 3 | 3 | 1.8 | 2.6 | 0 | 1.75 | 1 | 0 | 1 | 1.8 | 2.6 | 3 | 2 |

Bengal College of Engineering and Technology
Department of Information Technology — B.Tech. in Information Technology
CO – PO – PSO Mapping

PCC-CS593 — *Object Oriented Programming Lab*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 1 | 2 | – | – | 2 | – | – | 2 | 2 | 3 | – |
| CO2 | 3 | 3 | 3 | 1 | 3 | – | – | 1 | – | – | 2 | 2 | 3 | – |
| CO3 | 3 | 3 | 3 | 2 | 3 | – | – | 3 | – | – | 2 | 2 | 3 | 2 |
| CO4 | 3 | 3 | 3 | 2 | 3 | – | – | 3 | – | – | 2 | 2 | 3 | 2 |
| CO5 | 3 | 3 | 3 | – | 1 | – | – | 2 | 2 | 2 | 2 | 2 | 3 | – |
| AVG | 3 | 3 | 3 | 1.5 | 2.4 | 0 | 0 | 2.2 | 2 | 2 | 2 | 2 | 3 | 2 |

Bengal College of Engineering and Technology
Department of Information Technology — B.Tech. in Information Technology
CO – PO – PSO Mapping

Semester VI

PCC-CS601 — Database Management Systems

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 2 | 3 | 1 | 1 | – | – | – | – | – | 1 | 3 | 2 | – |
| CO2 | 3 | 3 | 2 | 3 | 3 | – | – | – | – | – | – | 3 | 3 | 2 |
| CO3 | 3 | 3 | 2 | 3 | 2 | – | 2 | – | – | 1 | – | 3 | 3 | 3 |
| CO4 | 2 | 3 | 3 | 1 | 2 | – | – | – | – | – | – | 3 | 3 | – |
| CO5 | 1 | 2 | 3 | 2 | 1 | – | – | – | – | 2 | – | 3 | 3 | 3 |
| AVG | 2.4 | 2.6 | 2.6 | 2 | 1.8 | 0 | 2 | 0 | 0 | 1.5 | 1 | 3 | 2.8 | 2.6 |

PCC-CS602 — Computer Networks

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 1 | – | 2 | 2 | – | – | – | – | – | 3 | 3 | 2 | – |
| CO2 | 3 | 2 | 2 | 3 | 3 | – | – | – | – | – | 3 | 3 | 2 | – |
| CO3 | 3 | 2 | – | 2 | 3 | – | – | – | – | – | 3 | 3 | 3 | 3 |
| CO4 | 3 | 3 | 3 | 3 | 3 | – | – | – | – | 1 | 3 | 3 | 2 | – |
| CO5 | 2 | 3 | 3 | 3 | 3 | – | – | – | – | 2 | 3 | 3 | 2 | – |
| AVG | 2.8 | 2.2 | 2.67 | 2.6 | 2.8 | 0 | 0 | 0 | 0 | 1.5 | 3 | 3 | 2.2 | 3 |

PEC-IT601D — Image Processing

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 2 | 2 | – | – | – | – | – | 3 | 3 | 2 | – |
| CO2 | 3 | 3 | 2 | 3 | 2 | – | – | – | – | – | 3 | 3 | 2 | 2 |
| CO3 | 3 | 1 | 3 | 2 | 2 | – | – | – | – | – | 3 | 3 | 3 | 3 |
| CO4 | 3 | 2 | 2 | 3 | 3 | – | – | – | – | 1 | 3 | 3 | 3 | – |
| CO5 | 3 | 3 | 3 | 3 | 3 | – | – | – | – | 2 | 3 | 3 | 3 | – |
| AVG | 3 | 2.4 | 2.6 | 2.6 | 2.4 | 0 | 0 | 0 | 0 | 1.5 | 3 | 3 | 2.6 | 2.5 |

PEC-IT602D — Pattern Recognition

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 2 | 2 | 2 | 1 | – | – | – | 2 | 1 | 3 | 2 | – |
| CO2 | 3 | 3 | 2 | 2 | 2 | 1 | – | – | – | 2 | 1 | 3 | 2 | – |
| CO3 | 3 | 3 | 2 | 2 | 2 | 1 | – | – | – | 2 | 1 | 3 | 3 | – |
| CO4 | 3 | 3 | 2 | 2 | 2 | 1 | – | – | – | 1 | 1 | 3 | 3 | 3 |
| CO5 | 3 | 3 | 2 | 2 | 2 | 1 | – | – | – | 2 | 1 | 3 | 3 | – |
| AVG | 3 | 3 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 1.8 | 1 | 3 | 2.6 | 3 |

OEC-IT601A — Numerical Methods

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | – | 2 | – | – | – | – | 2 | – | – | – | 3 | 3 | 2 | – |
| CO2 | – | – | – | – | – | – | – | – | – | – | 2 | 3 | 2 | 2 |
| CO3 | – | 2 | – | 2 | – | – | – | – | 2 | – | 2 | 3 | 2 | – |
| CO4 | – | – | – | – | 2 | – | 3 | – | – | – | 2 | 3 | 3 | – |
| CO5 | – | – | – | – | – | – | – | – | – | – | – | 3 | 3 | 2 |
| AVG | 0 | 2 | 0 | 2 | 2 | 0 | 2.5 | 0 | 2 | 0 | 2.25 | 3 | 2.4 | 2 |

Bengal College of Engineering and Technology
 Department of Information Technology — B.Tech. in Information Technology
CO – PO – PSO Mapping

PROJ-CS601 — *Research Methodology*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|------|------|-----|------|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 2 | 2 | – | – | 1 | – | 2 | 3 | 3 | – | 2 |
| CO2 | 3 | 3 | 2 | 2 | 2 | – | – | 1 | – | 2 | 3 | 3 | – | 2 |
| CO3 | 3 | 1 | 2 | 2 | 2 | – | – | 1 | – | 2 | 3 | 3 | – | 2 |
| CO4 | 3 | 2 | 2 | 2 | 3 | – | – | 1 | – | 2 | 3 | 3 | 2 | 2 |
| CO5 | – | – | – | – | – | – | 3 | 1 | – | – | 3 | 2 | – | 3 |
| AVG | 3 | 2.25 | 2.25 | 2 | 2.25 | 0 | 3 | 1 | 0 | 2 | 3 | 2.8 | 2 | 2.2 |

PCC-CS691 — *Database Management System Lab*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|------|------|------|------|------|
| CO1 | 3 | 2 | 3 | 1 | 3 | 1 | 1 | 2 | – | 1 | 2 | 2 | 3 | 1 |
| CO2 | 3 | 2 | 3 | 2 | 3 | 1 | – | 2 | – | 1 | 2 | 2 | 3 | 1 |
| CO3 | 3 | 3 | 3 | 2 | 3 | 1 | 2 | 2 | – | 1 | 2 | 3 | 3 | – |
| CO4 | 3 | 2 | 3 | 2 | 3 | 1 | 2 | 2 | – | 1 | 2 | 2 | 3 | 2 |
| CO5 | 3 | 3 | 3 | 3 | 3 | 1 | 2 | 2 | – | 1 | 2 | 2 | 3 | 2 |
| AVG | 3 | 2.4 | 3 | 2 | 3 | 1 | 1.75 | 2 | 0 | 1 | 2 | 2.2 | 3 | 1.5 |

PCC-CS692 — *Computer Networks Lab*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 2 | 3 | – | 3 | – | – | 2 | – | 3 | – | 2 | 2 | – |
| CO2 | 3 | 2 | 3 | – | 3 | – | – | 0 | – | 3 | – | 3 | 2 | – |
| CO3 | 3 | 2 | 3 | – | 3 | – | – | 2 | – | 3 | 3 | 3 | 3 | 2 |
| CO4 | 3 | 2 | 3 | – | 3 | – | – | 2 | – | 3 | 3 | 3 | 3 | 2 |
| CO5 | 3 | 2 | 3 | – | 3 | – | – | 0 | – | 3 | 0 | 2 | 3 | 2 |
| AVG | 3 | 2 | 3 | 0 | 3 | 0 | 0 | 2 | 0 | 3 | 3 | 2.6 | 2.6 | 2 |

Fourth Year

Semester VII

PEC-CS701E — Machine Learning

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 3 | 3 | – | – | 2 | – | – | 3 | 3 | 3 | 1 |
| CO2 | 3 | 3 | 2 | 3 | 3 | – | – | 2 | 1 | – | 3 | 3 | 2 | 3 |
| CO3 | 3 | 2 | 2 | 3 | 3 | – | – | 2 | 1 | – | 3 | 2 | 3 | 2 |
| CO4 | 3 | 3 | 3 | 3 | 3 | – | – | 2 | 1 | – | 3 | 3 | 3 | 3 |
| CO5 | 2 | 2 | 2 | 2 | 3 | – | – | 1 | – | – | 3 | 2 | 3 | 2 |
| AVG | 2.8 | 2.6 | 2.4 | 2.8 | 3 | 0 | 0 | 1.8 | 1 | 0 | 3 | 2.6 | 2.8 | 2.2 |

OEC-CS701B — Multimedia Technology

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | – | – | – | – | – | – | – | – | – | – | – | 2 | 2 | 3 |
| CO2 | – | – | – | 2 | – | – | – | – | – | – | – | 1 | 3 | 2 |
| CO3 | – | – | – | 2 | 1 | – | – | – | – | – | – | 3 | 2 | 2 |
| CO4 | – | – | – | 2 | 1 | – | – | – | – | – | – | 1 | 2 | 2 |
| CO5 | – | – | – | 2 | 1 | – | – | – | – | – | – | 3 | 3 | 3 |
| AVG | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2.4 | 2.4 |

PEC-IT702F — Cyber Security

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|------|------|-----|-----|------|-----|------|------|------|------|------|
| CO1 | – | – | – | – | – | – | – | – | – | – | – | 3 | 2 | 3 |
| CO2 | – | – | – | 2 | – | – | – | 1 | – | – | – | 2 | – | 3 |
| CO3 | 1 | – | – | 1 | 1 | – | – | 2 | – | 2 | – | 2 | 3 | 2 |
| CO4 | 1 | 1 | – | 2 | 2 | – | – | 1 | – | 1 | – | 2 | 3 | 2 |
| CO5 | – | 1 | – | 2 | 1 | – | – | – | – | – | – | 3 | 3 | 2 |
| AVG | 1 | 1 | 0 | 1.75 | 1.33 | 0 | 0 | 1.33 | 0 | 1.5 | 0 | 2.4 | 2.75 | 2.4 |

HSMC 701 — Project Management and Entrepreneurship

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 3 | 3 | 2 | – | – | – | – | – | 3 | 2 | 2 | 3 |
| CO2 | 3 | 3 | 3 | 3 | 3 | – | – | – | – | – | 2 | 2 | 2 | 3 |
| CO3 | 3 | 3 | 3 | 1 | 3 | 1 | – | – | – | – | 3 | 2 | 3 | 3 |
| CO4 | 3 | 3 | 3 | 3 | – | – | – | – | – | – | 3 | 3 | 2 | 3 |
| CO5 | 3 | 3 | 3 | 3 | 2 | – | – | – | – | – | 3 | – | – | 3 |
| AVG | 3 | 3 | 3 | 2.6 | 2.5 | 1 | 0 | 0 | 0 | 0 | 2.8 | 2.25 | 2.25 | 3 |

Bengal College of Engineering and Technology
 Department of Information Technology — B.Tech. in Information Technology
CO – PO – PSO Mapping

OEC-IT701C — *Soft Skills & Interpersonal Communication*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | 3 | 3 | 3 | 3 | 3 | – | – | – | 2 | 2 | – | – | 3 |
| CO2 | 2 | 3 | 3 | 3 | 1 | 2 | – | – | – | – | – | – | – | 3 |
| CO3 | 2 | 2 | – | 2 | 3 | – | – | – | – | – | – | – | – | 3 |
| CO4 | 2 | 2 | – | 2 | 3 | – | – | – | – | – | – | – | – | 3 |
| CO5 | 1 | 1 | 1 | 2 | 2 | – | – | – | – | – | – | – | 2 | 3 |
| AVG | 1.8 | 2.2 | 2.34 | 2.4 | 2.4 | 2.5 | 0 | 0 | 0 | 2 | 2 | – | 2 | 3 |

PROJ-IT781 — *Project – II*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | 3 | 3 | 3 | 3 | 3 | – | – | – | 2 | 2 | 3 | 2 | 2 |
| CO2 | 2 | 3 | 3 | 3 | 1 | 2 | – | – | – | – | – | 3 | 2 | 2 |
| CO3 | 2 | 2 | – | 2 | 3 | – | – | – | – | – | – | 2 | 3 | 2 |
| CO4 | 2 | 2 | – | 2 | 3 | – | – | – | – | – | – | 3 | 3 | 2 |
| CO5 | 1 | 1 | 1 | 2 | 2 | – | – | – | – | – | – | 2 | 3 | 3 |
| AVG | 1.8 | 2.2 | 2.34 | 2.4 | 2.4 | 2.5 | 0 | 0 | 0 | 2 | 2 | 2.6 | 2.6 | 2.2 |

Bengal College of Engineering and Technology

Department of Information Technology — B.Tech. in Information Technology

CO – PO – PSO Mapping

Semester VIII

PEC-IT801B — *Cryptography and Network Security*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|------------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 3 | 3 | 2 | – | – | – | – | – | – | – | 1 | 3 | 3 | – |
| CO2 | 3 | 3 | 3 | – | 2 | – | – | – | – | – | – | 3 | 3 | – |
| CO3 | 2 | 2 | 1 | 2 | 3 | 1 | 1 | 1 | 3 | – | – | 3 | 3 | – |
| CO4 | 3 | 3 | 2 | 2 | 3 | 1 | 1 | 0 | 2 | – | – | 2 | 3 | – |
| CO5 | 3 | 2 | 3 | 2 | 1 | – | – | – | 1 | – | – | 2 | 2 | 3 |
| AVG | 2.8 | 2.6 | 2.2 | 2 | 2.25 | 1 | 1 | 1 | 2 | 0 | 1 | 2.6 | 2.8 | 3 |

OEC-IT802A — *E-Commerce and ERP*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|------------|-----|-----|------|-----|-----|------|-----|-----|-----|------|------|------|------|------|
| CO1 | 1 | 2 | – | – | 1 | 2 | – | – | – | 1 | 1 | 2 | 2 | 3 |
| CO2 | 1 | 2 | 2 | 1 | 1 | 1 | – | – | – | 1 | – | 2 | 3 | 3 |
| CO3 | 1 | 1 | 1 | 1 | 1 | – | – | – | – | 1 | – | 3 | 2 | 2 |
| CO4 | 1 | 1 | 1 | 1 | 1 | 1 | – | – | – | 1 | – | 2 | 3 | 2 |
| CO5 | 1 | 1 | 1 | 1 | 1 | 1 | – | – | – | 1 | – | 2 | 3 | 2 |
| AVG | 1 | 1.4 | 1.25 | 1 | 1 | 1.25 | 0 | 0 | 0 | 1 | 1 | 2.2 | 2.6 | 2.4 |

OEC-CS801B — *Cyber Law and Ethics*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|------------|-----|-----|------|------|-----|------|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | 2 | – | – | 1 | 2 | – | – | – | 1 | 1 | 3 | 2 | 3 |
| CO2 | 1 | 2 | 2 | 1 | 1 | 1 | – | – | – | 1 | – | 3 | 2 | 3 |
| CO3 | 1 | 1 | 1 | 2 | 1 | – | – | – | – | 2 | – | 3 | 3 | 3 |
| CO4 | 1 | 1 | 1 | 1 | 1 | 1 | – | – | – | 1 | – | 3 | 3 | 3 |
| CO5 | 1 | 1 | 1 | 1 | 1 | 1 | – | – | – | 1 | – | 3 | 2 | 3 |
| AVG | 1.2 | 1.4 | 1.25 | 1.25 | 1 | 1.25 | 0 | 0 | 0 | 1.2 | 1 | 3 | 2.4 | 3 |

PROJ-CS881 — *Project – III*

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 | PSO3 |
|------------|-----|------|-----|------|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1 | 2 | 2 | 1 | 2 | 2 | 1 | – | – | – | – | – | 3 | 2 | 2 |
| CO2 | 2 | 2 | 3 | 3 | 3 | 1 | – | – | – | – | – | 2 | 3 | 2 |
| CO3 | 3 | 3 | 3 | 2 | 1 | – | – | – | – | – | – | 3 | 3 | 2 |
| CO4 | 2 | 2 | 2 | 2 | 2 | – | – | 2 | 2 | 2 | 2 | 2 | 2 | 3 |
| CO5 | 2 | – | 2 | – | 2 | – | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 3 |
| AVG | 2.2 | 2.25 | 2.2 | 2.25 | 2 | 1 | 2 | 2.5 | 2.5 | 2.5 | 2.5 | 2.4 | 2.4 | 2.4 |