

NANDHA COLLEGE OF TECHNOLOGY, ERODE-52
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
R-2021

Mapping of Course Outcome and Programme Outcome																	
Year	Sem	Course name	P O												PS O		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
I	I	Induction Programme															
		Professional English - I	1.6	2.2	1.8	2.2	1.5	3	3	3	1.6	3	3	3	-	-	-
		Matrices and Calculus	3	3	1	1	0	0	0	0	2	0	2	3	-	-	-
		Engineering Physics	3	3	1.6	1.2	1.8	1	-	-	-	-	-	1	-	-	-
		Engineering Chemistry	2.8	1.3	1.6	1	-	1.5	1.8	-	-	-	-	1.5	-	-	-
		Problem Solving and Python Programming	2	3	3	3	2	-	-	-	-	-	2	2	3	3	
		தமிழர் மரபு /Heritage of Tamils															
		Problem Solving and Python Programming Laboratory	2	3	3	3	2	-	-	-	-	-	2	2	3	3	-
		Physics and Chemistry Laboratory	3	2.4	2.6	1	1										
			2.6	1.3	1.6	1	1	1.4	1.8	-	-	-	-	1.3	-	-	-
	English Laboratory	3	3	3	3	1	3	3	3	3	3	3	3	-	-	-	
	II	Professional English - II	3	3	3	3	2.75	3	3	3	2.2	3	3	3	-	-	-
		Statistics and Numerical Methods	3	3	1	1	1	0	0	0	2	0	2	3	-	-	-
		Physics for Information Science	3	1.3	2	1.3	2.3	1	1.3	-	-	-	-	2	-	-	-
		Basic Electrical and Electronics Engineering	2	1.8	1	-	-	-	-	1	-	-	-	2	-	-	1
		Engineering Graphics	3	1	2	-	2	-	-	-	-	3	-	2	2	2	-
		Programming in C	2	2	2	1	2	1	1	1	2	-	3	2	2	2	-
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		Engineering Practices Laboratory	3	2	-	-	1	1	1	-	-	-	-	2	2	1	1

		Programming in C Laboratory	2	2	3	2	1	2	-	-	2	1	2	2	2	2	
		Communication Laboratory / Foreign Language ^s	2.4	2.8	3	3	1.8	3	3	3	3	3	3	3	-	-	-
II	III	Discrete Mathematics	1	3	2	1	-	-	-	-	-	1	-	-	-	-	-
		Digital Principles and Computer Organization	3	3	3	3	1.8	1.6	1	1	1	1	1.6	2.6	1.4	2.6	1.6
		Foundations of Data Science	2	2	1	2	2	1	1	-	1	1	1	2	2	2	2
		Data Structures	2	2	1	2	2	1	1	-	1	1	1	2	2	2	2
		Object Oriented Programming	2	1	2	2	2	-	-	-	2	2	1	2	3	2	2
		Data Structures Laboratory	2	2	2	1	2	-	-	-	2	2	2	2	2	2	3
		Object Oriented Programming Laboratory	2	2	2	2	2	-	-	-	2	2	2	2	2	2	2
		Data Science Laboratory	2	2	2	2	1	-	-	-	2	2	2	2	2	3	2
		Professional Development															
	IV	Theory of Computation	2	2	2	2	1	-	-	-	1	2	2	2	2	2	2
		Artificial Intelligence and Machine Learning	2	1	2	2	1	-	-	-	2	2	2	3	2	2	2
		Database Management Systems	2	2	3	2	1	-	-	-	2	2	2	2	2	2	3
		Algorithms	2.67	1.8	3	1				1.33				1		1	1
		Introduction to Operating Systems	2	2	2	2	1	-	-	-	2	2	2	2	1	2	2
		Environmental Sciences and Sustainability	2.8	1.8	1	1	-	2.2	2.4	-	-	-	-	1.8	-	-	-
		Operating Systems Laboratory	2	2	2	2	2	-	-	-	2	2	2	2	2	2	2
		Database Management Systems Laboratory	2	3	2	2	1	-	-	-	2	1	3	2	2	2	2
III	V	Computer Networks	-	1	-	-	1	-	-	-	-	1	-	-	-	1	1
		Compiler Design	3.00	2.80	2.60	2.20	2.00	-	-	-	2.60	2.00	1.60	2.40	1.80	1.80	2.00
		Cryptography and Cyber Security	3	2.6	2.6	2.6	2.8	-	-	-	2	-	-	1.2	2.8	2.8	3

		Distributed Computing	1.8	2.4	1.8	2.4	2	-	-	-	2.6	2.2	2.2	1.6	2	1.8	1.6
	VI	Object Oriented Software Engineering	2	2	1	2	2	-	-	-	-	1	1	2	2	2	1
		Embedded Systems and IoT	2.6	2	3	2.4	1.5	-	-	-	1	2.2	2.2	2.4	2.2	1.6	2.6
IV	VII	Human Values and Ethics															
		Summer internship															
	VII I	Project Work / Internship															

1 - low, 2 - medium, 3 - high, '-' - no correlation

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

- Apply their technical competence in computer science to solve real world problems, with technical and people leadership.
- Conduct cutting edge research and develop solutions on problems of social relevance.
- Work in a business environment, exhibiting team skills, work ethics, adaptability and lifelong learning.

COURSE OUTCOMES AND PROGRAM OUTCOMES

Course Outcomes (COs)

Course Name: C101 Professional English I

Year of Study: 2021 – 22

C101.1	Utilize appropriate words in a professional context
C101.2	Understand basic grammatic structures and use them in right context.
C101.3	Infer the denotative and connotative meanings of technical texts
C101.4	Build definitions, descriptions, narrations and essays on various topics
C101.5	Improve the vocabulary skills in a professional context

Course Name: C102 Matrices and Calculus

Year of Study: 2021 – 22

C102.1	Use the matrix algebra methods for solving practical problems.
C102.2	Apply differential calculus tools in solving various application problems.
C102.3	Able to use differential calculus ideas on several variable functions.
C102.4	Apply different methods of integration in solving practical problems.
C102.5	Apply multiple integral ideas in solving areas, volumes and other practical problems

C103.1	Understand the importance of mechanics
C103.2	Express their knowledge in electromagnetic waves
C103.3	Demonstrate a strong foundational knowledge in oscillations, optics and lasers
C103.4	Understand the importance of quantum physics
C103.5	Comprehend and apply quantum mechanical principles towards the formation of energy bands

C104.1	Infer the quality of water from quality parameter data and propose suitable treatment methodologies to treat water.
C104.2	Identify and apply basic concepts of nanoscience and nanotechnology in designing the synthesis of nanomaterials for engineering and technology applications.
C104.3	Apply the knowledge of phase rule and composites for material selection requirements.
C104.4	Recommend suitable fuels for engineering processes and applications.
C104.5	Recognize different forms of energy resources and apply them for suitable applications in energy sectors.

C105.1	Develop algorithmic solutions to simple computational problems
C105.2	Develop and execute simple Python programs.
C105.3	Write simple Python programs using conditionals and loops for solving problems
C105.4	Represent compound data using Python lists, tuples, dictionaries etc.
C105.5	Read and write data from/to files in Python programs.

C106.1	Develop algorithmic solutions to simple computational problems
C106.2	Develop and execute simple Python programs.
C106.3	Implement programs in Python using conditionals and loops for solving problems.
C106.4	Deploy functions to decompose a Python program.
C106.5	Utilize Python packages in developing software applications

C107P.1	Understand the functioning of various physics laboratory equipment.
C107P.2	Use graphical models to analyze laboratory data.
C107P.3	Use mathematical models as a medium for quantitative reasoning and describing physical reality.
C107P.4	Access, process and analyze scientific information.
C107P.5	Solve problems individually and collaboratively.

C107C.1	Analyse the quality of water samples with respect to their acidity, alkalinity, hardness and DO.
C107C.2	Determine the amount of metal ions through volumetric and spectroscopic techniques
C107C.3	Analyse and determine the composition of alloys.
C107C.4	Learn simple method of synthesis of nanoparticles
C107C.5	Quantitatively analyse the impurities in solution by electroanalytical techniques

C108.1	Listen to and comprehend general as well as complex academic information
C108.2	Listen to and understand different points of view in a discussion
C108.3	Speak fluently and accurately in formal and informal communicative contexts
C108.4	Describe products and processes and explain their uses and purposes clearly and accurately
C108.5	Express their opinions effectively in both formal and informal discussions

C109.1	Compare and contrast products and ideas in technical texts.
C109.2	Identify cause and effects in events, industrial processes through technical texts
C109.3	Analyse problems in order to arrive at feasible solutions and communicate them orally and in the written format.
C109.4	Outline events and the processes of technical and industrial nature.
C109.5	Explain their opinions in a planned and logical manner, and draft effective resumes in context of job search.

C110.1	Apply the concept of testing of hypothesis for small and large samples in real life problems.
C110.2	Apply the basic concepts of classifications of design of experiments in the field of agriculture.
C110.3	Build the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems.
C110.4	Classify the knowledge of various techniques and methods for solving first and second order ordinary differential equations.
C110.5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications.

C111.1	Understand classical and quantum free electron theories
C111.2	Analyze the basics of semiconductor physics and its applications
C111.3	Categorize magnetic properties of materials and their applications in data storage
C111.4	Interpret the functioning of optical materials for opto electronics
C111.5	Understand the basics of quantum structures and their applications and basics of quantum computing

C112.1	Compute the electric circuit parameters for simple problems
C112.2	Explain the working principle and applications of electrical machines
C112.3	Analyze the characteristics of analog electronic devices
C112.4	Explain the basic concepts of digital electronics
C112.5	Explain the operating principles of measuring instruments

C113.1	Discuss about conics and orthographic views of engineering components.
C113.2	Draw the projection of points, lines and planes.
C113.3	Classify solids and projection of solids at different positions.
C113.4	Show sectioned view of solids and development of surface.
C113.5	Draw isometric projection and perspective views of an object/solid.

C114.1	Demonstrate knowledge on C Programming constructs and Develop simple applications in C using basic constructs.
C114.2	Design and implement applications using arrays and strings.
C114.3	Develop and implement modular applications in C using functions.
C114.4	Develop applications in C using structures and pointers.
C114.5	Design applications using sequential and random access file processing.

C115.1	Able to fabricate the carpentry components and plumbing work
C115.2	Better usage of welding equipments and basic machining operation
C115.3	Ability to understand the making of sheet metal, airconditioning and fittings
C115.4	To measure the electrical quantities & carry out the basic home electrical works
C115.5	Ability to understand the components, gates and soldering process

C116.1	Demonstrate knowledge on C programming constructs and Develop programs in C using basic constructs.
C116.2	Develop programs in C using arrays.
C116.3	Develop applications in C using strings, pointers, functions.
C116.4	Develop applications in C using structures.
C116.5	Develop applications in C using file processing.

C117.1	Speak effectively in group discussion held in a formal/semi formal contexts.
C117.2	Discuss, analyze and present concepts and problems from various perspectives to arrive at suitable solutions.
C117.3	Write emails, letters and effective job applications.
C117.4	Write critical reports to convey data and information with clarity and precision.
C117.5	Give appropriate instructions and recommendations for safe execution of tasks.

C201.1	Develop the knowledge of the concept to test the logics
C201.2	Organize the statements and implications using truth tables, mathematical induction and recurrence relation
C201.3	Apply basic definitions and properties associated with simple graphs and describe the difference between Eulerian and Hamiltonian paths
C201.4	Make use of the operations on sets, binary relations, equivalence relations and partial ordered sets
C201.5	Construct the Hasse diagram, understand the concept lattice and Boolean algebra

C202.1	Design various combinational digital circuits using logic gates
C202.2	Design sequential circuits and analyze the design procedures
C202.3	State the fundamentals of computer systems and analyze the execution of an instruction
C202.4	Analyze different types of control design and identify hazards
C202.5	Identify the characteristics of various memory systems and I/O communication

C203.1	Define the data science process
C203.2	Understand different types of data description for data science process
C203.3	Gain knowledge on relationships between data
C203.4	Use the Python Libraries for Data Wrangling
C203.5	Apply visualization Libraries in Python to interpret and explore data

C204.1	Define linear and non-linear data structures.
C204.2	Implement linear and non-linear data structure operations.
C204.3	Use appropriate linear/non-linear data structure operations for solving a given problem.
C204.4	Apply appropriate graph algorithms for graph applications.
C204.5	Analyze the various searching and sorting algorithms.

C205.1	Understand Object Oriented Programming concepts and basics of Java programming language
C205.2	Know the principles of packages, inheritance and interfaces
C205.3	Develop a java application with threads and generics classes
C205.4	Define exceptions and use I/O streams
C205.5	Design and build Graphical User Interface Application using JAVA FX

C206.1	Implement Linear data structure algorithms.
C206.2	Implement applications using Stacks and Linked lists
C206.3	Implement Binary Search tree and AVL tree operations
C206.4	Implement graph algorithms
C206.5	Analyze the various searching and sorting algorithms.

C207.1	Design and develop java programs using object oriented programming concepts
C207.2	Develop simple applications using object oriented concepts such as package, exceptions
C207.3	Implement multithreading, and generics concepts
C207.4	Create GUIs and event driven programming applications for real world problems
C207.5	Implement and deploy web applications using Java

C208.1	Make use of the python libraries for data science
C208.2	Make use of the basic Statistical and Probability measures for data science
C208.3	Perform descriptive analytics on the benchmark data sets
C208.4	Perform correlation and regression analytics on standard data sets
C208.5	Present and interpret data using visualization packages in Python

C209.1	Construct automata theory using Finite Automata
C209.2	Write regular expressions for any pattern
C209.3	Design context free grammar and Pushdown Automata
C209.4	Design Turing machine for computational functions
C209.5	Differentiate between decidable and undecidable problems

C210.1	Use Appropriate search algorithms for problem solving
C210.2	Apply reasoning under uncertainty
C210.3	Build supervised learning models
C210.4	Build ensembling and unsupervised models
C210.5	Build deep learning neural network models

C211.1	Construct SQL Queries using relational algebra
C211.2	Design database using ER model and normalize the database
C211.3	Construct queries to handle transaction processing and maintain consistency of the database
C211.4	Compare and contrast various indexing strategies and apply the knowledge to tune the performance of the database
C211.5	Appraise how advanced databases differ from Relational Databases and find a suitable database for the given requirement

C212.1	Analyze the efficiency of algorithms using various frameworks
C212.2	Apply graph algorithms to solve problems and analyze their efficiency.
C212.3	Make use of algorithm design techniques like divide and conquer, dynamic programming and greedy techniques to solve problems
C212.4	Use the state space tree method for solving problems
C212.5	Solve problems using approximation algorithms and randomized algorithms

C213.1	Define and implement UNIX Commands.
C213.2	Compare the performance of various CPU Scheduling Algorithms.
C213.3	Compare and contrast various Memory Allocation Methods.
C213.4	Define File Organization and File Allocation Strategies.
C213.5	Implement various Disk Scheduling Algorithms.

C214.1	Recognize and understand the functions of environment, ecosystems and biodiversity and their conservation
C214.2	Identify the causes, effects of environmental pollution and natural disasters and contribute to the preventive measures in the society.
C214.3	Identify and apply the understanding of renewable and non-renewable resources and contribute to the sustainable measures to preserve them for future generations
C214.4	Recognize the different goals of sustainable development and apply them for suitable technological advancement and societal development
C214.5	Demonstrate the knowledge of sustainability practices and identify green materials, energy cycles and the role of sustainable urbanization

C215.1	Understand the basics of Unix command and shell programming & implement various CPU scheduling algorithms.
C215.2	Implement Deadlock Avoidance and Deadlock Detection Algorithms
C215.3	Implement Page Replacement Algorithms
C215.4	Implement various memory allocation methods.
C215.5	Be familiar with File Organization and File Allocation Strategies.

C216.1	Create databases with different types of key constraints
C216.2	Construct simple and complex SQL queries using DML and DCL commands
C216.3	Use advanced features such as stored procedures and triggers and incorporate in GUI based application development
C216.4	Create an XML database and validate with meta-data (XML schema)
C216.5	Create and manipulate data using NOSQL database

C301.1	Understand the concept of layering in networks.
C301.2	Know the functions of protocols of each layer of TCP/IP protocol suite
C301.3	Visualize the end-to-end flow of information.
C301.4	Learn the functions of network layer and the various routing protocols
C301.5	Familiarize the functions and protocols of the Transport layer

C302.1	Understand the techniques in different phases of a compiler.
C302.2	Design a lexical analyser for a sample language and learn to use the LEX tool.
C302.3	Apply different parsing algorithms to develop a parser and learn to use YACC tool
C302.4	Understand semantics rules (SDT), intermediate code generation and run-time environment.
C302.5	Implement code generation and apply code optimization techniques.

C303.1	Discuss to analyze the security of in-built cryptosystems
C303.2	Illustrate the e fundamental mathematical concepts related to security.
C303.3	Demonstrate the cryptographic algorithms for information security..
C303.4	Design and Comprehend the various types of data integrity and authentication schemes.
C303.5	Determine cyber crimes and cyber security.

C304.1	Explain the foundations of distributed systems
C304.2	Solve synchronization and state consistency problems
C304.3	Use resource sharing techniques in distributed systems
C304.4	Apply working model of consensus and reliability of distributed systems
C304.5	Explain the fundamentals of cloud computing

C305.1	Construct a basic website using HTML and Cascading Style Sheets
C305.2	Build dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.
C305.3	Develop server side programs using Servlets and JSP.
C305.4	Construct simple web pages in PHP and to represent data in XML format.
C305.5	Develop interactive web applications.

C306.1	Explain the real world business problems and model with analytical solutions
C306.2	Identify the business processes for extracting Business Intelligence
C306.3	Apply predictive analytics for business forecasting
C306.4	Apply analytics for supply chain and logistics management
C306.5	Use analytics for marketing and sales

C307.1	Impart knowledge on the concepts of Disaster, Vulnerability and Disaster Risk reduction (DRR)
C307.2	Enhance understanding on Hazards, Vulnerability and Disaster Risk Assessment prevention and risk reduction
C307.3	Develop disaster response skills by adopting relevant tools and technology
C307.4	Enhance awareness of institutional processes for Disaster response in the country and
C307.5	Develop rudimentary ability to respond to their surroundings with potential Disaster response in areas where they live, with due sensitivity

C308.1	Compare various Software Development Lifecycle Models
C308.2	Evaluate project management approaches as well as cost and schedule estimation strategies.
C308.3	Perform formal analysis on specifications.
C308.4	Use UML diagrams for analysis and design.
C308.5	Architect and design using architectural styles and design patterns, and test the system

C309.1	Explain the architecture of embedded processors.
C309.2	Write embedded C programs.
C309.3	Design simple embedded applications.
C309.4	Compare the communication models in IOT
C309.5	Design IoT applications using Arduino/Raspberry Pi /open platform.

C310.1	Classify the encryption techniques.
C310.2	Illustrate the key management technique and authentication.
C310.3	Evaluate the security techniques applied to the network and transport layer.
C310.4	Discuss the application layer security standards.
C310.5	Apply security practices for real time applications.

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C311.2	Illustrate the key management technique and authentication.
C311.3	Evaluate the security techniques applied to the network and transport layer.
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C311.5	Apply security practices for real time applications.

C312.1	Exhibit cloud-design skills to build and automate business solutions using cloud technologies
C312.2	Possess Strong theoretical foundation leading to excellence and excitement towards adoption of cloud-based services
C312.3	Solve the real world problems using Cloud services and technologies
C312.4	Select Appropriate structures for designing, deploying and running cloud-based services in a business environment
C312.5	Illustrate the benefits and drive the adoption of cloud-based services to solve real world problems.

C313.1	Understand the basic concept of safety
C313.2	Obtain knowledge of Statutory Regulations and standards.
C313.3	Know about the safety Activities of the Working Place.
C313.4	Analyze on the impact of Occupational Exposures and their Remedies
C313.5	Obtain knowledge of Risk Assessment Techniques.

Programme level Course – PO matrix of all courses including first year courses

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C101.1	1	1	1	1	1	3	3	3	1	3	-	3	-	-	-
C101.2	1	1	1	1	1	3	3	3	1	3	-	3	-	-	-
C101.3	2	3	2	3	2	3	3	3	2	3	3	3	-	-	-
C101.4	2	3	2	3	2	3	3	3	2	3	3	3	-	-	-
C101.5	2	3	3	3	-	3	3	3	2	3	-	3	-	-	-
Average	1.60	2.20	1.80	2.20	1.50	3.00	3.00	3.00	1.60	3.00	3.00	3.00	-	-	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C102.1	3	3	1	1	-	-	-	-	2	-	2	3	-	-	-
C102.2	3	3	1	1	-	-	-	-	2	-	2	3	-	-	-
C102.3	3	3	1	1	-	-	-	-	2	-	2	3	-	-	-
C102.4	3	3	1	1	-	-	-	-	2	-	2	3	-	-	-
C102.5	3	3	1	1	-	-	-	-	2	-	2	3	-	-	-
Average	3.00	3.00	1.00	1.00	-	-	-	-	2.00		2.00	3.00	-	-	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C103.1	3	3	2	1	1	1	-	-	-	-	-	-	-	-	-
C103.2	3	3	2	1	2	1	-	-	-	-	-	-	-	-	-
C103.3	3	3	2	2	2	1	-	-	-	-	-	1	-	-	-
C103.4	3	3	1	1	2	1	-	-	-	-	-	-	-	-	-
C103.5	3	3	1	1	2	1	-	-	-	-	-	-	-	-	-
Average	3.00	3.00	1.60	1.20	1.80	1.00	-	-	-	-	-	1.00	-	-	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C104.1	3	2	2	1	-	1	1	-	-	-	-	1	-	-	-
C104.2	2	-	-	1	-	2	2	-	-	-	-	-	-	-	-
C104.3	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-
C104.4	3	1	1	-	-	1	2	-	-	-	-	-	-	-	-
C104.5	3	1	2	1	-	2	2	-	-	-	-	2	-	-	-
Average	2.80	1.30	1.70	1.00	-	1.50	1.80	-	-	-	-	1.50	-	-	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C105.1	3	3	3	3	2	-	-	-	-	-	2	2	3	3	-
C105.2	3	3	3	3	2	-	-	-	-	-	2	2	3	-	-
C105.3	3	3	3	3	2	-	-	-	-	-	2	-	3	-	-
C105.4	1	2	-	2	2	-	-	-	-	-	1	-	2	-	-
C105.5	2	2	-	-	2	-	-	-	-	-	1	-	2	-	-
Average	2.40	2.60	3.00	2.80	2.00	-	-	-	-	-	1.60	2.00	2.60	3.00	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C106.1	3	3	3	3	2	-	-	-	-	-	2	2	3	3	-
C106.2	3	3	3	3	2	-	-	-	-	-	2	2	3	-	-
C106.3	3	3	3	3	2	-	-	-	-	-	2	-	3	-	-
C106.4	1	2	-	2	2	-	-	-	-	-	1	-	2	-	-
C106.5	2	2	-	-	2	-	-	-	-	-	1	-	2	-	-
Average	2.40	2.60	3.00	2.80	2.00	-	-	-	-	-	1.60	2.00	2.60	3.00	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
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C107P.1	3	2	3	1	1	-	-	-	-	-	-	-	-	-	-
C107P.2	3	3	2	1	1	-	-	-	-	-	-	-	-	-	-
C107P.3	3	2	3	1	1	-	-	-	-	-	-	-	-	-	-
C107P.4	3	3	2	1	1	-	-	-	-	-	-	-	-	-	-
C107P.5	3	2	3	1	1	-	-	-	-	-	-	-	-	-	-
Average	3.00	2.40	2.60	1.00	1.00	-	-	-	-	-	-	-	-	-	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C107C.1	3	-	1	-	-	2	2	-	-	-	-	2	-	-	-
C107C.2	3	1	2	-	-	1	2	-	-	-	-	1	-	-	-
C107C.3	3	2	1	1	-	-	1	-	-	-	-	-	-	-	-
C107C.4	2	1	2	-	-	2	2	-	-	-	-	-	-	-	-
C107C.5	2	1	2	-	1	2	2	-	-	-	-	1	-	-	-
Average	2.60	1.30	1.60	1.00	1.00	1.80	1.80	-	-	-	-	1.30	-	-	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C108.1	3	3	3	3	1	3	3	3	3	3	3	3	-	-	-
C108.2	3	3	3	3	1	3	3	3	3	3	3	3	-	-	-
C108.3	3	3	3	3	1	3	3	3	3	3	3	3	-	-	-
C108.4	3	3	3	3	1	3	3	3	3	3	3	3	-	-	-
C108.5	3	3	3	3	1	3	3	3	3	3	3	3	-	-	-
Average	3.00	3.00	3.00	3.00	1.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	-	-	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C109.1	3	3	3	3	3	3	3	3	2	3	3	3	-	-	
C109.2	3	3	3	3	3	3	3	3	2	3	3	3	-	-	
C109.3	3	3	3	3	3	3	3	3	2	3	3	3	-	-	
C109.4	3	3	3	3	2	3	3	3	2	3	3	3	-	-	
C109.5	-	-	-	-	-	-	-	-	3	3	3	3	-	-	
Average	3.00	3.00	3.00	3.00	2.75	3.00	3.00	3.00	2.20	3.00	3.00	3.00	-	-	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C110.1	3.00	3.00	1.00	1.00	1.00	-	-	-	2.00	-	2.00	3.00	-	-	-
C110.2	3.00	3.00	1.00	1.00	1.00	-	-	-	2.00	-	2.00	3.00	-	-	-
C110.3	3.00	3.00	1.00	1.00	1.00	-	-	-	2.00	-	2.00	3.00	-	-	-
C110.4	3.00	3.00	1.00	1.00	1.00	-	-	-	2.00	-	2.00	3.00	-	-	-
C110.5	3.00	3.00	1.00	1.00	1.00	-	-	-	2.00	-	2.00	3.00	-	-	-
Average	3.00	3.00	1.00	1.00	1.00	-	-	-	2.00		2.00	3.00	-	-	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C111.1	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-
C111.2	3	1	2	-	-	-	-	-	-	-	-	-	-	-	-
C111.3	3	-	-	1	2	1	1	-	-	-	-	-	-	-	-
C111.4	3	-	2	1	3	-	1	-	-	-	-	-	-	-	-
C111.5	3	2	2	2	2	1	2	-	-	-	-	2	-	-	-
Average	3.00	1.30	2.00	1.30	2.30	1.00	1.30	-	-	-	-	2.00	-	-	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C112.1	2	2	1	-	-	-	-	1	-	-	-	2	-	-	1
C112.2	3	2	1	-	-	-	-	1	-	-	-	2	-	-	1
C112.3	2	1	1	-	-	-	-	1	-	-	-	2	-	-	1
C112.4	2	2	1	-	-	-	-	1	-	-	-	2	-	-	1
C112.5	2	2	1	-	-	-	-	1	-	-	-	2	-	-	1
Average	2.20	1.80	1.00	-	-	-	-	1.00	-	-	-	2.00	-	-	1.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C113.1	3	1	2	-	2	-	-	-	-	3	-	2	2	2	-
C113.2	3	1	2	-	2	-	-	-	-	3	-	2	2	2	-
C113.3	3	1	2	-	2	-	-	-	-	3	-	2	2	2	-
C113.4	3	1	2	-	2	-	-	-	-	3	-	2	2	2	-
C113.5	3	1	2	-	2	-	-	-	-	3	-	2	2	2	-
Average	3.00	1.00	2.00	-	2.00	-	-	-	-	3.00	-	2.00	2.00	2.00	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C114.1	1.5	2	2	1	2	1	1	1	2	-	3	2.5	1.5	2	-
C114.2	2	3	2	1	2	1	1	1	2	-	3	2	2	2	-
C114.3	3	2	2	1	3	1	1	1	2	-	3	3	2	2	-
C114.4	2	3	3	1	2	1	2	1	2	-	3	2	2	3	-
C114.5	2	2	3	2	1	2	-	-	2	1	2	2	2	2	-
Average	2.10	2.40	2.40	1.20	2.00	1.20	1.30	1.00	2.00	1.00	2.80	2.30	1.90	2.20	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C115.1	3	1	-	-	1	1	1	-	-	-	-	2	2	1	1
C115.2	3	1	-	-	1	1	1	-	-	-	-	2	2	1	1
C115.3	3	1	-	-	1	1	1	-	-	-	-	2	2	1	1
C115.4	3	1	-	-	1	1	1	-	-	-	-	2	2	1	1
C115.5	3	1	-	-	1	1	1	-	-	-	-	2	2	1	1
Average	3.00	1.00	-	-	1.00	1.00	1.00	-	-	-	-	2.00	2.00	1.00	1.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C116.1	1.5	3	3	1.5	1	1	-	-	2	1	2	2	2	2.5	-
C116.2	2	2	2	1	1	2	-	-	2	-	2	2	2	2	-
C116.3	2	2	2	2	1	2	-	-	3	-	3	3	3	2	-
C116.4	2	2	3	2	3	2	-	-	3	-	3	3	3	3	-
C116.5	2	2	3	2	1	2	-	-	2	1	2	2	2	2	-
Average	1.90	2.20	2.60	1.70	1.40	1.80	-	-	2.40	1.00	2.40	2.40	2.40	2.30	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C117.1	2	3	3	3	1	3	3	3	3	3	3	3	-	-	-
C117.2	2	3	3	3	1	3	3	3	3	3	3	3	-	-	-
C117.3	2	2	3	3	1	3	3	3	3	3	3	3	-	-	-
C117.4	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
C117.5	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
Average	2.40	2.80	3.00	3.00	1.80	3.00	3.00	3.00	3.00	3.00	3.00	3.00	-	-	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C201.1	3	3	2	-	-	-	-	-	-	-	-	2	-	-	-
C201.2	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
C201.3	-	3	2	-	-	2	-	-	-	3	-	-	-	-	-
C201.4	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-
C201.5	-	2	2	2	-	-	-	-	-	2	-	-	-	-	-
Average	3.00	3.00	2.00	2.00	-	2.00	-	-	-	3.00	-	2.00	-	-	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C202.1	3	3	3	3	3	2	1	1	1	1	2	3	2	3	-
C202.2	3	3	3	3	2	1	1	1	1	1	2	3	1	2	-
C202.3	3	3	3	3	2	2	1	1	1	1	2	3	2	3	-
C202.4	3	3	3	3	1	1	1	1	1	1	1	2	1	3	-
C202.5	3	3	3	3	1	2	1	1	1	1	1	2	1	2	-
Average	3.00	3.00	3.00	3.00	1.80	1.60	1.00	1.00	1.00	1.00	1.60	2.60	1.40	2.60	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C203.1	2	2	1	2	2	-	-	-	1	1	1	2	2	2	2
C203.2	2	1	-	1	1	-	-	-	2	1	1	2	2	3	1
C203.3	2	2	1	2	2	1	1	-	1	2	1	3	2	2	3
C203.4	3	2	2	1	2	-	-	-	1	1	2	2	3	3	2
C203.5	2	2	1	2	2	-	-	-	1	1	1	2	2	2	2
Average	2.00	2.00	1.00	2.00	2.00	1.00	1.00	-	1.00	1.00	1.00	2.00	2.00	2.00	2.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C210.1	3	2	3	3	-	-	-	-	1	3	3	3	1	2	2
C210.2	1	1	1	3	1	-	-	-	1	2	1	3	2	3	2
C210.3	2	1	2	1	1	-	-	-	2	1	1	3	1	1	1
C210.4	3	1	3	1	-	-	-	-	2	1	2	1	2	2	2
C210.5	3	1	1	2	2	-	-	-	3	1	2	3	2	1	2
Average	2.00	1.00	2.00	2.00	1.00	-	-	-	2.00	2.00	2.00	3.00	2.00	2.00	2.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C211.1	2	2	3	2	1	-	-	-	2	1	1	1	2	1	3
C211.2	3	1	1	1	1	-	-	-	2	3	3	3	3	1	2
C211.3	3	2	3	2	1	-	-	-	2	1	1	2	2	3	3
C211.4	1	2	3	2	-	-	-	-	3	2	3	3	1	2	3
C211.5	1	1	3	3	2	-	-	-	1	3	3	1	2	2	2
Average	2.00	2.00	3.00	2.00	1.00	-	-	-	2.00	2.00	2.00	2.00	2.00	2.00	3.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C212.1	3	2	-	-	-	-	1	-	-	-	-	1	-	1	-
C212.2	2	3	-	-	-	-	1	-	-	-	-	1	-	1	-
C212.3	1	2	3	1	-	-	2	-	-	-	-	-	-	1	1
C212.4	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
C212.5	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	2.67	1.80	3.00	1.00	-	-	1.33	-	-	-	-	1.00	-	1.00	1.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C216.1	3	3	3	3	-	-	-	-	3	1	3	2	2	3	2
C216.2	2	2	3	2	2	-	-	-	1	2	3	3	2	1	2
C216.3	3	3	2	1	1	-	-	-	1	1	1	3	2	3	3
C216.4	1	3	3	3	1	-	-	-	1	1	3	2	3	1	3
C216.5	3	2	1	1	1	-	-	-	2	2	3	1	3	1	2
Average	2.00	3.00	2.00	2.00	1.00	-	-	-	2.00	1.00	3.00	2.00	2.00	2.00	2.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C301.1	-	2	-	-		-	-	-	-	-	-	-	3	-	-
C301.2	-	1	-	-	2	-	-	-	-	-	-	2	-	2	-
C301.3	-	2	-	-	3	-	-	-	-	-	-	-	-	3	-
C301.4	-		-	1	2	-	-	-	-	3	-	-	-	-	-
C301.5	-	3	2	-	-	-	-	-	-	-	-	-	-	-	3
Average	-	1.00	-	-	1.00	-	-	-	-	1.00	-	-	-	1.00	1.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C302.1	3	3	3	3	-	-	-	-	3	3	1	3	2	3	2
C302.2	3	3	3	3	3	-	-	-	3	2	3	2	2	1	2
C302.3	3	3	2	2	3	-	-	-	3	1	1	1	2	2	3
C302.4	3	2	2	1	1	-	-	-	2	3	2	3	1	2	1
C302.5	3	3	3	2	1	-	-	-	2	1	1	3	2	1	2
Average	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	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C303.1	3	2	1	2	2	-	-	-	1	-	-	1	2	3	-
C303.2	3	3	3	3	3	-	-	-	2	-	-	1	3	3	-
C303.3	3	3	3	3	3	-	-	--	2		-	1	3	3	-
C303.4	3	3	3	3	3	-	-	-	2	-	-	1	3	3	-
C303.5	3	2	3	2	3	-	-	-	3	-	-	2	3	2	-
Average	3.00	2.60	2.60	2.60	2.80	-	-	-	2.00	-	--	1.20	2.80	2.80	-

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C304.1	2	2	3	3	1	-	-	-	2	1	3	3	2	1	1
C304.2	1	3	2	1	2	-	-	-	2	2	2	2	1	3	2
C304.3	2	2	1	3	3	-	-	-	3	2	1	1	1	2	1
C304.4	1	2	2	3	1	-	-	-	3	3	2	1	3	1	1
C304.5	3	3	1	2	3	-	-	-	3	3	3	1	3	2	3
Average	1.80	2.40	1.80	2.40	2.00	-	-	-	2.60	2.20	2.20	1.60	2.00	1.80	1.60

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C305.1	3	2	3	3	3	-	-	-	1	3	3	1	3	2	3
C305.2	2	2	2	1	2	-	-	-	2	2	1	3	2	2	2
C305.3	1	1	3	2	3	-	-	-	1	2	1	1	1	2	1
C305.4	2	3	3	1	2	-	-	-	3	1	2	2	2	2	2
C305.5	1	2	3	2	2	-	-	-	2	1	3	1	1	1	2
Average	1.80	2.00	2.80	1.80	2.40	0.00	0.00	0.00	1.80	1.80	2.00	1.60	1.80	1.80	2.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C306.1	2	2	3	1	1	-	-	-	1	2	1	1	3	2	1
C306.2	3	3	3	2	3	-	-	-	1	2	2	2	3	1	2
C306.3	2	2	3	3	2	-	-	-	3	1	1	3	3	1	2
C306.4	2	1	1	2	2	-	-	-	3	3	2	1	1	3	1
C306.5	2	3	2	3	2	-	-	-	3	3	1	3	3	1	1
Average	2.20	2.20	2.40	2.20	2.00	-	-	-	2.20	2.20	1.40	2.60	2.60	1.60	1.40

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C307.1	3	3	2	3	-	-	2	2	-	-	2	-	2	-	1
C307.2	3	3	3	3	-	-	2	1	-	-	2	-	2	-	1
C307.3	3	3	3	3	-	-	2	2	-	-	-	-	2	-	1
C307.4	3	3	2	3	-	-	2	1	-	-	2	-	2	-	1
C307.5	3	3	2	3	-	-	2	2	-	-	2	-	3	-	1
Average	3.00	3.00	3.00	3.00	-	-	2.00	2.00	-	-	2.00	-	2.00	-	1.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C308.1	2	2	1	2	2	-	-	-	-	1	1	2	2	2	1
C308.2	2	3	2	3	2	-	-	-	2	2	3	2	3	2	1
C308.3	2	3	2	1	1	-	-	-	2	2	3	2	2	3	1
C308.4	2	3	2	2	3	-	-	-	2	2	3	2	2	3	1
C308.5	2	3	1	2	2	-	-	-	-	-	-	1	3	2	2
Average	2.00	2.00	1.00	2.00	2.00	-	-	-	-	1.00	1.00	2.00	2.00	2.00	1.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C309.1	2	2	1	2	2	-	-	-	-	1	1	2	2	2	1
C309.2	2	3	2	3	2	-	-	-	2	2	3	2	3	2	1
C309.3	2	3	2	1	1	-	-	-	2	2	3	2	2	3	1
C309.4	2	3	2	2	3	-	-	-	2	2	3	2	2	3	1
C309.5	2	3	1	2	2	-	-	-	-	-	-	1	3	2	2
Average	2.00	2.00	1.00	2.00	2.00	-	-	-	-	1.00	1.00	2.00	2.00	2.00	1.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C310.1	3	3	2	2	2	-	-	-	2	1	2	1	2	3	1
C310.2	1	1	3	2	2	-	-	-	2	2	1	1	3	1	2
C310.3	1	2	1	1	2	-	-	-	3	3	1	3	2	1	3
C310.4	2	2	3	2	3	-	-	-	3	3	2	1	2	1	3
C310.5	2	1	3	2	2	-	-	-	2	1	1	3	2	1	1
Average	1.80	1.80	2.40	1.80	2.20	-	-	-	2.40	2.00	1.40	1.80	2.20	1.40	2.00

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C311.1	3	3	2	2	2	-	-	-	2	1	2	1	2	3	1
C311.2	1	1	3	2	2	-	-	-	2	2	1	1	3	1	2
C311.3	1	2	1	1	2	-	-	-	3	3	1	3	2	1	3
C311.4	2	2	3	2	3	-	-	-	3	3	2	1	2	1	3
C311.5	2	1	3	2	2	-	-	-	2	1	1	3	2	1	1
Average	1.80	1.80	2.40	1.80	2.20	-	-	-	2.40	2.0	1.40	1.80	2.20	1.40	2.0

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
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C312.1	3	3	1	1	1	-	-	-	2	1	3	2	2	1	3
C312.2	3	1	2	3	2	-	-	-	1	2	3	1	2	2	2
C312.3	1	1	3	1	3	-	-	-	3	3	1	1	3	2	1
C312.4	1	1	1	2	3	-	-	-	2	3	3	1	1	1	1
C312.5	1	3	3	2	2	-	-	-	1	3	1	2	1	3	2
Average	1.80	1.80	2.00	1.80	2.20	-	-	-	1.80	2.40	2.20	1.40	1.80	1.80	1.80

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C313.1	3	3	3	1	1	3	2	2	3	3	1	3	3	3	3
C313.2	2	3	2	2	1	3	2	3	3	2	1	3	3	3	3
C313.3	2	2	2	2	1	2	2	2	3	2	1	2	3	3	3
C313.4	3	3	3	2	2	3	2	2	3	2	1	3	3	3	3
C313.5	3	2	3	2	2	3	2	2	3	2	2	3	3	3	3
Average	3.00	3.00	3.00	2.00	1.00	3.00	2.00	2.00	3.00	2.00	1.00	3.00	3.00	3.00	3.00

A Program level Course – PO – PSO matrix of all courses INCLUDING first year courses

Course	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
C101	1.60	2.20	1.80	2.20	1.50	3.00	3.00	3.00	1.60	3.00	3.00	3.00	-	-	-
C102	3.00	3.00	1.00	1.00	-	-	-	-	2.00		2.00	3.00	-	-	-
C103	3.00	3.00	1.60	1.20	1.80	1.00						1.00			
C104	2.80	1.30	1.70	1.00	-	1.50	1.80	-	-	-	-	1.50	-	-	-
C105	2.40	2.60	3.00	2.80	2.00	-	-	-	-	-	1.60	2.00	2.60	3.00	-
C106	2.40	2.60	3.00	2.80	2.00	-	-	-	-	-	1.60	2.00	2.60	3.00	-
C107P	3.00	2.40	2.60	1.00	1.00	-	-	-	-	-	-	-	-	-	-
C107C	2.60	1.30	1.60	1.00	1.00	1.80	1.80	-	-	-	-	1.30	-	-	-
C108	3.00	3.00	3.00	3.00	1.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	-	-	-
C109	3.00	3.00	3.00	3.00	2.75	3.00	3.00	3.00	2.20	3.00	3.00	3.00	-	-	-
C110	3.00	3.00	1.00	1.00	1.00	-	-	-	2.00		2.00	3.00	-	-	-
C111	3.00	1.30	2.00	1.30	2.30	1.00	1.30	-	-	-	-	2.00	-	-	-
C112	2.20	1.80	1.00	-	-	-	-	1.00	-	-	-	2.00	-	-	1.00
C113	3.00	1.00	2.00	-	2.00	-	-	-	-	3.00	-	2.00	2.00	2.00	-
C114	2.10	2.40	2.40	1.20	2.00	1.20	1.30	1.00	2.00	1.00	2.80	2.30	1.90	2.20	-
C115	3.00	1.00	-	-	1.00	1.00	1.00	-	-	-	-	2.00	2.00	1.00	1.00
C116	1.90	2.20	2.60	1.70	1.40	1.80	-	-	2.40	1.00	2.40	2.40	2.40	2.30	-
C117	2.40	2.80	3.00	3.00	1.80	3.00	3.00	3.00	3.00	3.00	3.00	3.00	-	-	-
C201	3.00	3.00	2.00	2.00	-	2.00	-	-	-	3.00	-	2.00	-	-	-
C202	3.00	3.00	3.00	3.00	1.80	1.60	1.00	1.00	1.00	1.00	1.60	2.60	1.40	2.60	-
C203	2.00	2.00	1.00	2.00	2.00	1.00	1.00	-	1.00	1.00	1.00	2.00	2.00	2.00	2.00
C204	2.00	2.00	1.00	2.00	2.00	-	-	-	1.00	1.00	1.00	2.00	2.00	2.00	2.00
C205	2.00	1.00	2.00	2.00	2.00	-	-	-	2.00	2.00	1.00	2.00	3.00	2.00	2.00

C206	2.00	2.00	2.00	1.00	2.00	-	-	-	2.00	2.00	2.00	2.00	2.00	2.00	3.00
C207	2.00	2.00	2.00	2.00	2.00	-	-	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00
C208	2.00	2.00	2.00	2.00	1.00	-	-	-	2.00	2.00	2.00	2.00	2.00	3.00	2.00
C209	2.00	2.00	2.00	2.00	1.00	-	-	-	1.00	2.00	2.00	2.00	2.00	2.00	2.00
C210	2.00	1.00	2.00	2.00	1.00	-	-	-	2.00	2.00	2.00	3.00	2.00	2.00	2.00
C211	2.00	2.00	3.00	2.00	1.00	-	-	-	2.00	2.00	2.00	2.00	2.00	2.00	3.00
C212	2.67	1.80	3.00	1.00	-	-	1.33	-	-	-	-	1.00	-	1.00	1.00
C213	2.00	2.00	2.40	1.80	1.00	-	-	-	2.20	1.80	1.80	1.60	1.40	2.00	1.80
C214	2.80	1.80	1.00	1.00	-	2.30	2.20	-	-	-	-	1.80	-	-	-
C215	2.00	2.00	2.00	2.00	2.00	-	-	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00
C216	2.00	3.00	2.00	2.00	1.00	-	-	-	2.00	1.00	3.00	2.00	2.00	2.00	2.00
C301	-	1.00	-	-	1.00	-	-	-	-	1.00	-	-	-	1.00	1.00
C302	3.00	2.80	2.60	2.20	2.00	-	-	-	2.60	2.00	1.60	2.40	1.80	1.80	2.00
C303	3.00	2.60	2.60	2.60	2.80	-	-	-	2.00	-	--	1.20	2.80	2.80	-
C304	1.80	2.40	1.80	2.40	2.00				2.60	2.20	2.20	1.60	2.00	1.80	1.60
C305	1.80	2.00	2.80	1.80	2.40	-	-	-	1.80	1.80	2.00	1.60	1.80	1.80	2.00
C306	2.20	2.20	2.40	2.20	2.00	-	-	-	2.20	2.20	1.40	2.60	2.60	1.60	1.40
C307	3.00	3.00	3.00	3.00	-	-	2.00	2.00	-	-	2.00	-	2.00	-	1.00
C308	2.00	2.00	1.00	2.00	2.00	-	-	-	-	1.00	1.00	2.00	2.00	2.00	1.00
C309	2.00	2.00	1.00	2.00	2.00	-	-	-	-	1.00	1.00	2.00	2.00	2.00	1.00
C310	1.80	1.80	2.40	1.80	2.20	-	-	-	2.40	2.00	1.40	1.80	2.20	1.40	2.00
C311	1.80	1.80	2.40	1.80	2.20	-	-	-	2.40	2.0	1.40	1.80	2.20	1.40	2.0
C312	1.80	1.80	2.00	1.80	2.20	-	-	-	1.80	2.40	2.20	1.40	1.80	1.80	1.80
C313	3.00	3.00	3.00	2.00	1.00	3.00	2.00	2.00	3.00	2.00	1.00	3.00	3.00	3.00	3.00