

**Department of Electronics & Computer Science**

Course Number: ELC301      Course Name: Engineering Mathematics - III

| Unique CO Number | Course Outcome (CO) Statement                                                                                                                                                                                                                                                                                                        |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ECC3011          | Understand the concept of Laplace Transform of various functions                                                                                                                                                                                                                                                                     |
| ECC3012          | Apply the Laplace Transform technique to solve ordinary differential equations                                                                                                                                                                                                                                                       |
| ECC3013          | Expand the periodic function by using Fourier Series problems.                                                                                                                                                                                                                                                                       |
| ECC3014          | Understand complex variable theory, applications of Harmonic Conjugate to get Orthogonal Trajectories and Analytics function                                                                                                                                                                                                         |
| ECC3015          | Compute eigen values & eigen vectors of a square matrix and relate their applicability in diagonalising a square matrix, finding a function of a square matrix                                                                                                                                                                       |
| ECC3016          | Choose the Vector differential operator to compute the Gradient, Divergence and Curl of a given Scalar point function/ vector point function and find the Gradient, Divergence and Curl of sum and product of two functions and Apply Green's theorem to evaluate vector integral & to evaluate surface integral use Stoke's theorem |

Course Number:ECC302      Course Name: Electronics Devices

| Unique CO Number | Course Outcome (CO) Statement                                      |
|------------------|--------------------------------------------------------------------|
| ELC 3021         | Describe the working and application of P-N junction diode         |
| ELC 3022         | Explain the working and characteristics of semiconductor devices   |
| ELC 3023         | Calculate the parameters of given circuit.                         |
| ELC 3024         | Analyze the performance of BJT and FET (dc and ac analysis)        |
| ELC 3025         | Compare the circuit configuration of similar semiconductor devices |
| ELC 3026         | Select suitable circuits for specific applications                 |

**Department of Electronics & Computer Science**

Course Number: ECC303

Course Name: Digital Electronics

| Unique CO Number | Course Outcome (CO) Statement                                                                                     |
|------------------|-------------------------------------------------------------------------------------------------------------------|
| ECC3031          | Recall the knowledge of mathematics, science and engineering to analyze and design digital communication systems. |
| ECC3032          | Understand working of combinational circuits and applications.                                                    |
| ECC3033          | Study the elements of sequential logic design, analysis and design of sequential circuits.                        |
| ECC3034          | Understand various counters and shift registers.                                                                  |
| ECC3035          | Explain and describe various logic families and Programmable Logic Devices                                        |
| ECC3036          | Develop programs with Verilog hardware description languages                                                      |

Course Number:ECC304

Course Name: Data Structure and Algorithm

| Unique CO Number | Course Outcome (CO) Statement                                                                     |
|------------------|---------------------------------------------------------------------------------------------------|
| ECC3041          | Explain basics of data structure, types, and its algorithms                                       |
| ECC3042          | Demonstrate the working of various Linear data structures                                         |
| ECC3043          | Represent and implement various nonlinear data structure                                          |
| ECC3044          | Select appropriate sorting and searching technique for a given problem.                           |
| ECC3045          | Develop solutions for real world problems by selecting appropriate data structure and algorithms. |
| ECC3046          | Analyze the data structure to solve the real-world problem                                        |

Course Number: ECC305

Course Name: Database Management System

| Unique CO Number | Course Outcome (CO) Statement                                     |
|------------------|-------------------------------------------------------------------|
| ECC3051          | Recognize the need of database management system.                 |
| ECC3052          | Design ER and EER diagram for real life applications              |
| ECC3053          | Construct relational model and write relational algebra queries.  |
| ECC3054          | Formulate SQL queries                                             |
| ECC 3055         | Apply the concept of normalization to relational database design. |
| ECC 3056         | Describe the concepts of transaction, concurrency and recovery    |

**Department of Electronics & Computer Science**

Course Number-ECL301

Course Name: Electronics Devices

| Unique CO Number | Course Outcome (CO) Statement                        |
|------------------|------------------------------------------------------|
| ECL3011          | Analyze the characteristics of semiconductor devices |
| ECL3012          | Analyze application of pn junction devices           |
| ECL3013          | Design rectifier and filter circuits                 |
| ECL3014          | Analyze BJT circuits                                 |
| ECL3015          | Analyze FET based circuits                           |
| ECL3016          | Design basic electronic circuits                     |

Course Number:ECL302

Course Name: Digital Electronics lab

| Unique CO Number | Course Outcome (CO) Statement                    |
|------------------|--------------------------------------------------|
| ECL3021          | Use the design steps of combinational circuits.  |
| ECL3022          | Use the design steps of sequential circuits.     |
| ECL3023          | Implement combinational and sequential circuits. |
| ECL3024          | Analyze combinational and sequential circuits.   |
| ECL3025          | Simulate digital circuits.                       |
| ECL3026          | Test and debug the simulation.                   |

Course Number: ECL303

Course Name: Data Structures and Algorithms Lab

| Unique CO Number | Course Outcome (CO) Statement                                                                                                       |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| ECL3031          | Implement linear data structures & will be able to handle operations like insertion, deletion, searching and                        |
| ECL3032          | Implement nonlinear data structures & will be able to handle operations like insertion, deletion, searching and traversing on them. |
| ECL3033          | Select appropriate data structure and apply it in various problem domains.                                                          |
| ECL3034          | Select appropriate searching techniques for given problems.                                                                         |
| ECL3035          | Select appropriate sorting techniques for given problems.                                                                           |
| ECL3036          | Illustrate and examine the methods of linked lists, stacks, queues, trees, and graphs to various real time problems.                |

**Department of Electronics & Computer Science**

Course Number: ECL304

Course Name: Database Management Systems lab

| Unique CO Number | Course Outcome (CO) Statement                                                                  |
|------------------|------------------------------------------------------------------------------------------------|
| ECL3051          | Design ER /EER diagram and convert to relational model for the realworld application.          |
| ECL3052          | Apply DDL, DML, DCL and TCL commands.                                                          |
| ECL3053          | Write simple and complex queries                                                               |
| ECL3054          | Use PL/SQL Constructs.                                                                         |
| ECL3055          | Demonstrate the concept of concurrent transactions execution and frontend-backend connectivity |

Course Number: ECM301

Course Name: Mini Project-I A

| Unique CO Number | Course Outcome (CO) Statement                                                                      |
|------------------|----------------------------------------------------------------------------------------------------|
| ECM3011          | Identify problems based on research needs                                                          |
| ECM3012          | Apply Knowledge and skill to solve societal problems in a group.                                   |
| ECM3013          | Draw the proper inferences from available results through theoretical/ experimental/simulations.   |
| ECM3014          | Analyze the impact of solutions in societal and environmental context for sustainable development. |
| ECM3015          | Use standard norms of engineering practices                                                        |
| ECM3016          | Excel in written and oral communication.                                                           |

Course name- Skill-base Lab -OOPM:(C++ and Java)

| Unique CO Number | Course Outcome (CO) Statement                                   |
|------------------|-----------------------------------------------------------------|
| EXL3631          | Recall fundamental programming constructs to resolve problems.  |
| EXL3632          | Summarize the concept of class, object and packages.            |
| EXL3633          | Demonstrate the use of strings, arrays and methods              |
| EXL3634          | Analyse OOPM feature of inheritance and interface               |
| EXL3635          | Recommend requirement of exception handling and multithreading. |
| EXL3636          | Generate applets and develop GUI based application.             |