R.M.K. ENGINEERING COLLEGE
(An Autonomous Institution)

R.S.M Nagar, Kavaraipettai, Gummidipoondi Taluk, Thiruvallur Dt- 601206.
(Affiliated to Anna University, Chennai/Approved by AICTE, New Delhi / ISO 9001:2015 Certified Institution/
Accredited by NAAC with A+ Grade/ All the eligible UG Programs are accredited by NBA, New Delhi)

DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2023 -24

B.E., - Civil Engineering – Even semester

THEORY COURSES			
S.No	**Semester**	**Course code**	**Course Name**
1	2	22ME201	Engineering Mechanics
THEORY COURSES WITH LABORATORY COMPONENT			
2	2	22MA201	Transforms and Numerical Methods
3	2	22CH102	Chemistry for Civil Engineering
4	2	22CE201	Construction and Building Materials
5	2	22IT201	Problem solving and Python Programming
LABORATORY COURSES WITH THEORY COMPONENT			
6	2	22ME202	Computer Aided Engineering Graphics
LABORATORY COURSES			
7	2	22ME211	Product Development Lab-2
MANDATORY COURSES			
8	2	22GE201	Tamils and Technology
AUDIT COURSES			
9	2		Yoga for Stress Management

Second Semester B.E., / CE

Theory courses

22ME201- Engineering Mechanics	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Illustrate the scalar representation of forces and moments
CO2	Analyze the rigid body in equilibrium
CO3	Evaluate the properties of surfaces and solids
CO4	Apply dynamic forces exerted in the bodies under motion
CO5	Solve the friction and the effects by the laws of friction
CO6	Apply the effort of forces and moments in the various design functions.

Theory Courses with Laboratory Component

22MA201- Transforms & Numerical Methods	
COs	**Course Outcomes:** After the successful completion of the course, the student will be able to:
CO1	determine Laplace transform and inverse transform of simple functions.
CO2	determine Z- transform and inverse transform of simple functions.
CO3	solve ordinary differential equations using Laplace transform and difference equations using Z-Transform.
CO4	compute the solutions of algebraic, transcendental and the system of equations.
CO5	appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems

22CH103- Chemistry for Civil Engineering	
COs	**Course Outcomes:** On successful completion of this course, the students will be able to:
CO1	Analyze water quality parameters and suggest appropriate water treatment methods.
CO2	Identify types of polymeric materials and their applications in construction industry.
CO3	Assess the causes of corrosion and their corrosion control methods.
CO4	Classify the types of cements and uses of composites in construction fields.
CO5	Evaluate the importance of engineering materials.

22CE201- Construction and Building Materials	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Apply the knowledge for the selection of different materials for masonry.
CO2	Compare the properties of various binding materials.
CO3	Analyze the physical properties of aggregates.
CO4	Examine the various applications of timber and steel.
CO5	Identify various building finishes and applications of modern building materials.
CO6	Perform experiments to verify the properties of bricks, cement and aggregates as per Indian Standards.

22IT201-Problem Solving and Python Programming	
COs	**Course Outcomes:** Upon completion of the course, students will be able to:
CO1	Implement simple Python programs.
CO2	Develop Python programs using functions.
CO3	Represent and solve compound data using Python lists, tuples, dictionaries.
CO4	Implement and perform operations on files, modules and packages.
CO5	Apply Exceptions, Standard Libraries and IDE for application development.

Laboratory Course with Theory Component

22ME202- Computer Aided Engineering Graphics	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Explain the various engineering standards required for drafting and exploreknowledge in conic sections.
CO2	Draw the orthographic views of 3D primitive objects.
CO3	Describe the projection of plane surfaces by the rotating plane method.
CO4	Apply the projection concepts and drafting tools to draw projections of solids.
CO5	Sketch the pictorial views of the objects using CAD tools.

Laboratory Courses

22ME211 - Product Development Lab - 2	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Understand the working and capacity of various engineering systems.
CO2	Infer the outcomes in the product development process.
CO3	Perform basic engineering and material characterization tests.
CO4	Demonstrate the ability to provide conceptual design strategies for a product.
CO5	Implement the Science, Engineering, Technology and Mathematics (STEM) for product design.

Mandatory Courses

22GE201 – Tamils and Technology	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Identify the role of weaving and ceramic technology in ancient Tamil Culture.
CO2	Assess the design and construction technology ideas in the current Tamil society.
CO3	Identify the different types of manufacturing technology used in Tamil society and their significance.
CO4	Classify agricultural and irrigation technologies in ancient Tamil society and its current relevance.
CO5	Discuss the fundamentals of scientific Tamil and Tamil computing.

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2023 -24

B.E., - Computer Science Engineering – Even semester

THEORY COURSES WITH LABORATORY COMPONENT			
S.No	**Semester**	**Course code**	**Course Name**
1	2	22MA201	Transforms and Numerical Methods
2	2	22CS201	Data Structures
3	2	22PH201	Physics for Computer Science and Information Technology
4	2	22HS101	Professional Communication
5	2	22CS202	Java Programming
6	2	22IT202	Database Management System
LABORATORY COURSES			
7	2	22ME211	Product Development Lab - 2
MANDATORY COURSES			
8	2	22GE201	Tamils and Technology
9	2	22CH104	Environmental Sciences and Sustainability (Non-Credit)
AUDIT COURSES			
10	2		Yoga for Stress Management

Second Semester B.E., / CSE

Theory Courses with Laboratory Component

22MA201- Transforms & Numerical Methods	
COs	**Course Outcomes:** After the successful completion of the course, the student will be able to:
CO1	determine Laplace transform and inverse transform of simple functions.
CO2	determine Z- transform and inverse transform of simple functions.
CO3	solve ordinary differential equations using Laplace transform and difference equations using Z-Transform.
CO4	compute the solutions of algebraic, transcendental and the system of equations.
CO5	appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems

22CS201- Data Structures	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Implement abstract data types for list.
CO2	Solve real world problems using appropriate linear data structures.
CO3	Apply appropriate tree data structures in problem solving.
CO4	Implement appropriate Graph representations and solve real-world applications.
CO5	Implement various searching and sorting algorithms.

22PH201 - Physics for Computer Science and Information Technology	
COs	**Course Outcomes:** On completion of this course, the students will be able to:
CO1	Discuss the basic principles of working of laser and their applications in fibre optic communication
CO2	Summarize the classical and quantum electron theories and energy band structures
CO3	Describe the conductivity in intrinsic and extrinsic semiconductors and importance of Hall effect measurements
CO4	Associate the properties of nanoscale materials and their applications in quantum computing
CO5	Interpret the properties of magnetic and superconducting materials and their applications in computer data storage

22HS101- Professional Communication	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Comprehend conversations and short talks delivered in English
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques
CO3	Read articles of a general kind in magazines and newspapers efficiently
CO4	Write short general essays, personal letters and E-mails in English
CO5	Develop vocabulary of a general kind by enriching reading skills

22CS202- Java Programming	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Understand the object-oriented programming concepts and fundamentals of Java.
CO2	Develop Java programs with the packages, interfaces and exceptions.
CO3	Build Java applications with I/O streams, threads and generics programming.
CO4	Apply strings and collections in developing applications.
CO5	Implement the concepts of JDBC.

22IT202- Database Management Systems	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Map ER model to Relational model to perform database design effectively.
CO2	Implement SQL and effective relational database design concepts.
CO3	Apply relational algebra, calculus and normalization techniques in database design.
CO4	Understand the concepts of transaction processing, concurrency control, recovery procedure and data storage techniques.
CO5	Apply query optimization techniques and understand advanced databases.

Laboratory Courses

22ME211 - Product Development Lab - 2	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Understand the working and capacity of various engineering systems.
CO2	Infer the outcomes in the product development process.
CO3	Perform basic engineering and material characterization tests.
CO4	Demonstrate the ability to provide conceptual design strategies for a product.
CO5	Implement the Science, Engineering, Technology and Mathematics (STEM) for product design.

Mandatory Courses

22GE201 – Tamils and Technology	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Identify the role of weaving and ceramic technology in ancient Tamil Culture.
CO2	Assess the design and construction technology ideas in the current Tamil society.
CO3	Identify the different types of manufacturing technology used in Tamil society and their significance.
CO4	Classify agricultural and irrigation technologies in ancient Tamil society and its current relevance.
CO5	Discuss the fundamentals of scientific Tamil and Tamil computing.

22CH104 - Environmental Sciences and Sustainability	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Investigate and use conservational practices to protect natural resources.
CO2	Identify the causes of pollutants and illustrate suitable methods for pollution abatement.
CO3	Adapt the values of biodiversity and its conservation methods.
CO4	Recognize suitable sustainable development practices and apply it in day-to-day life.
CO5	Assess the impacts of human population and suggest suitable solutions.

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2023 -24

B.E., - Electrical and Electronics Engineering – Even semester

THEORY COURSES WITH LABORATORY COMPONENT			
S.No	**Semester**	**Course code**	**Course Name**
1	2	22MA201	Transforms and Numerical Methods
2	2	22CS201	Data Structures
3	2	22CH101	Engineering Chemistry
4	2	22IT202	Database Management System
5	2	22CS202	Java Programming
LABORATORY COURSES WITH THEORY COMPONENT			
6	2	22ME202	Computer Aided Engineering Graphics
LABORATORY COURSES			
7	2	22ME211	Product Development Lab- 2
MANDATORY COURSES			
8	2	22GE201	Tamils and Technology
AUDIT COURSES			
9	2		Yoga for Stress Management

Second Semester B.E., / EEE

Theory Courses with Laboratory Component

22MA201- Transforms & Numerical Methods	
COs	**Course Outcomes:** After the successful completion of the course, the student will be able to:
CO1	determine Laplace transform and inverse transform of simple functions.
CO2	determine Z- transform and inverse transform of simple functions.
CO3	solve ordinary differential equations using Laplace transform and difference equations using Z-Transform.
CO4	compute the solutions of algebraic, transcendental and the system of equations.
CO5	appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems

22CS201- Data Structures	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Implement abstract data types for list.
CO2	Solve real world problems using appropriate linear data structures.
CO3	Apply appropriate tree data structures in problem solving.
CO4	Implement appropriate Graph representations and solve real-world applications.
CO5	Implement various searching and sorting algorithms.

22CH101- Engineering Chemistry	
COs	**Course Outcomes:** On successful completion of this course, the students will be able to:
CO1	Interpret the water quality parameters and explain the various water treatment methods.
CO2	Construct the electro chemical cells and sensors.
CO3	Compare different energy storage devices and predict their relevance in electric vehicles.
CO4	Classify different types of smart materials, their properties and applications in Engineering and Technology.
CO5	Integrate the concepts of nano chemistry and enumerate its applications in various fields.

22IT202- Database Management Systems	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Map ER model to Relational model to perform database design effectively.
CO2	Implement SQL and effective relational database design concepts.
CO3	Apply relational algebra, calculus and normalization techniques in database design.
CO4	Understand the concepts of transaction processing, concurrency control, recovery procedure and data storage techniques.
CO5	Apply query optimization techniques and understand advanced databases.

22CS202- Java Programming	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Understand the object-oriented programming concepts and fundamentals of Java.
CO2	Develop Java programs with the packages, interfaces and exceptions.
CO3	Build Java applications with I/O streams, threads and generics programming.
CO4	Apply strings and collections in developing applications.
CO5	Implement the concepts of JDBC.

Laboratory Courses with Theory Component

22ME202 - Computer Aided Engineering Graphics	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Explain the various engineering standards required for drafting and exploreknowledge in conic sections.
CO2	Draw the orthographic views of 3D primitive objects.
CO3	Describe the projection of plane surfaces by the rotating plane method.
CO4	Apply the projection concepts and drafting tools to draw projections of solids.
CO5	Sketch the pictorial views of the objects using CAD tools.

Laboratory Courses

22ME211 - Product Development Lab - 2	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Understand the working and capacity of various engineering systems.
CO2	Infer the outcomes in the product development process.
CO3	Perform basic engineering and material characterization tests.
CO4	Demonstrate the ability to provide conceptual design strategies for a product.
CO5	Implement the Science, Engineering, Technology and Mathematics (STEM) for product design.

Mandatory Courses

22GE201 – Tamils and Technology	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Identify the role of weaving and ceramic technology in ancient Tamil Culture.
CO2	Assess the design and construction technology ideas in the current Tamil society.
CO3	Identify the different types of manufacturing technology used in Tamil society and their significance.
CO4	Classify agricultural and irrigation technologies in ancient Tamil society and its current relevance.
CO5	Discuss the fundamentals of scientific Tamil and Tamil computing.

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2023 -24

B.E., - Electronics and Communication Engineering – Even semester

THEORY COURSES WITH LABORATORY COMPONENT			
S.No	**Semester**	**Course code**	**Course Name**
1	2	22MA201	Transforms and Numerical Methods
2	2	22EC201	Electron Devices and Circuit Theory
3	2	22CH101	Engineering Chemistry
4	2	22CS201	Data Structures
5	2	22CS202	Java Programming
LABORATORY COURSES WITH THEORY COMPONENT			
6	2	22ME202	Computer Aided Engineering Graphics
LABORATORY COURSES			
7	2	22ME211	Product Development Lab- 2
MANDATORY COURSES			
8	2	22GE201	Tamils and Technology
AUDIT COURSES			
9	2		Yoga for Stress Management

Second Semester B.E., / ECE

Theory Courses with Laboratory Component

22MA201- Transforms & Numerical Methods	
COs	**Course Outcomes:** After the successful completion of the course, the student will be able to:
CO1	determine Laplace transform and inverse transform of simple functions.
CO2	determine Z- transform and inverse transform of simple functions.
CO3	solve ordinary differential equations using Laplace transform and difference equations using Z-Transform.
CO4	compute the solutions of algebraic, transcendental and the system of equations.
CO5	appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems

22EC201- Electron Devices and Circuit Theory	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to:
CO1	Examine the performance of electronic circuits using PN junction diode and Zener diode.
CO2	Construct electronic circuits using BJT and FET to sketch the input and output characteristics.
CO3	Demonstrate the behavior of special semiconductor devices in various applications.
CO4	Comprehend the impact of voltage and current in electric circuits using Mesh & Nodal methods.
CO5	Relate various network theorems to determine the response of the electric circuits.
CO6	Perform practical exercises as an individual and / or team member to manage the task in time.
CO7	Express the experimental results with effective presentation and report.

22CH101- Engineering Chemistry	
COs	**Course Outcomes:** On successful completion of this course, the students will be able to
CO1	Interpret the water quality parameters and explain the various water treatment methods.
CO2	Construct the electro chemical cells and sensors.
CO3	Compare different energy storage devices and predict their relevance in electric vehicles.
CO4	Classify different types of smart materials, their properties and applications in Engineering and Technology.
CO5	Integrate the concepts of nano chemistry and enumerate its applications in various fields.

22CS201- Data Structures	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Implement abstract data types for list.
CO2	Solve real world problems using appropriate linear data structures.
CO3	Apply appropriate tree data structures in problem solving.
CO4	Implement appropriate Graph representations and solve real-world applications.
CO5	Implement various searching and sorting algorithms.

22CS202- Java Programming	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Understand the object-oriented programming concepts and fundamentals of Java.
CO2	Develop Java programs with the packages, interfaces and exceptions.
CO3	Build Java applications with I/O streams, threads and generics programming.
CO4	Apply strings and collections in developing applications.
CO5	Implement the concepts of JDBC.

Laboratory Courses with Theory Component

22ME202 - Computer Aided Engineering Graphics	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to
CO1	Explain the various engineering standards required for drafting and exploreknowledge in conic sections.
CO2	Draw the orthographic views of 3D primitive objects.
CO3	Describe the projection of plane surfaces by the rotating plane method.
CO4	Apply the projection concepts and drafting tools to draw projections of solids.
CO5	Sketch the pictorial views of the objects using CAD tools.

Laboratory Courses

22ME211 - Product Development Lab - 2	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Understand the working and capacity of various engineering systems.
CO2	Infer the outcomes in the product development process.
CO3	Perform basic engineering and material characterization tests.
CO4	Demonstrate the ability to provide conceptual design strategies for a product.
CO5	Implement the Science, Engineering, Technology and Mathematics (STEM) for product design.

Mandatory Courses

22GE201 – Tamils and Technology	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Identify the role of weaving and ceramic technology in ancient Tamil Culture.
CO2	Assess the design and construction technology ideas in the current Tamil society.
CO3	Identify the different types of manufacturing technology used in Tamil society and their significance.
CO4	Classify agricultural and irrigation technologies in ancient Tamil society and its current relevance.
CO5	Discuss the fundamentals of scientific Tamil and Tamil computing.

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2023 -24

B.E., - Mechanical Engineering – Even semester

THEORY COURSES			
S.No	**Semester**	**Course code**	**Course Name**
1	2	22ME201	Engineering Mechanics
THEORY COURSES WITH LABORATORY COMPONENT			
2	2	22MA201	Transforms and Numerical Methods
3	2	22CH103	Chemistry for Mechanical Engineering
4	2	22IT203	Data Structures and Algorithms
5	2	22CS202	Java Programming
LABORATORY COURSES WITH THEORY COMPONENT			
6	2	22ME202	Computer Aided Engineering Graphics
LABORATORY COURSES			
7	2	22ME211	Product Development Lab-2
MANDATORY COURSES			
8	2	22GE201	Tamils and Technology
AUDIT COURSES			
9	2		Yoga for Stress Management

Second Semester B.E., / MECH

Theory courses

22ME201- Engineering Mechanics	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Illustrate the scalar representation of forces and moments
CO2	Analyze the rigid body in equilibrium
CO3	Evaluate the properties of surfaces and solids
CO4	Apply dynamic forces exerted in the bodies under motion
CO5	Solve the friction and the effects by the laws of friction
CO6	Apply the effort of forces and moments in the various design functions.

Theory Courses with Laboratory Component

22MA201- Transforms & Numerical Methods	
COs	**Course Outcomes:** After the successful completion of the course, the student will be able to:
CO1	determine Laplace transform and inverse transform of simple functions.
CO2	determine Z- transform and inverse transform of simple functions.
CO3	solve ordinary differential equations using Laplace transform and difference equations using Z-Transform.
CO4	compute the solutions of algebraic, transcendental and the system of equations.
CO5	appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems

22CH103- Chemistry for Mechanical Engineering	
COs	**Course Outcomes:** On successful completion of this course, the students will be able to:
CO1	Analyze water quality parameters and suggest appropriate water treatment methods.
CO2	Construct electro chemical cells and sensors.
CO3	Investigate the types of fuel and combustion process.
CO4	Evaluate the importance of engineering materials.
CO5	Assess phase equilibrium diagram and alloys.

22IT203- Data Structures and Algorithms	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Understand the concepts of basic data structures such as array and Linked List.
CO2	Applying a suitable algorithm for searching and sorting.
CO3	Analyze the various tree algorithms for solving real time computing problems.
CO4	Understanding graph algorithms, operations, and applications
CO5	Understanding the importance of hashing

22CS202- Java Programming	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Understand the object-oriented programming concepts and fundamentals of Java.
CO2	Develop Java programs with the packages, interfaces and exceptions.
CO3	Build Java applications with I/O streams, threads and generics programming.
CO4	Apply strings and collections in developing applications.
CO5	Implement the concepts of JDBC.

Laboratory Course with Theory Component

22ME202- Computer Aided Engineering Graphics	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Explain the various engineering standards required for drafting and exploreknowledge in conic sections.
CO2	Draw the orthographic views of 3D primitive objects.
CO3	Describe the projection of plane surfaces by the rotating plane method.
CO4	Apply the projection concepts and drafting tools to draw projections of solids.
CO5	Sketch the pictorial views of the objects using CAD tools.

Laboratory Courses

22ME211 - Product Development Lab - 2	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Understand the working and capacity of various engineering systems.
CO2	Infer the outcomes in the product development process.
CO3	Perform basic engineering and material characterization tests.
CO4	Demonstrate the ability to provide conceptual design strategies for a product.
CO5	Implement the Science, Engineering, Technology and Mathematics (STEM) for product design.

Mandatory Courses

22GE201 – Tamils and Technology	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Identify the role of weaving and ceramic technology in ancient Tamil Culture.
CO2	Assess the design and construction technology ideas in the current Tamil society.
CO3	Identify the different types of manufacturing technology used in Tamil society and their significance.
CO4	Classify agricultural and irrigation technologies in ancient Tamil society and its current relevance.
CO5	Discuss the fundamentals of scientific Tamil and Tamil computing.

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2023 -24

B.E., - Computer Science and Design – Even semester

THEORY COURSES WITH LABORATORY COMPONENT			
S.No	**Semester**	**Course code**	**Course Name**
1	2	22MA201	Transforms and Numerical Methods
2	2	22CS201	Data Structures
3	2	22PH201	Physics for Computer Science and Information Technology
4	2	22HS101	Professional Communication
5	2	22CS202	Java Programming
6	2	22IT202	Database Management System
LABORATORY COURSES			
7	2	22ME211	Product Development Lab - 2
MANDATORY COURSES			
8	2	22GE201	Tamils and Technology
9	2	22CH104	Environmental Sciences and Sustainability (Non-Credit)
AUDIT COURSES			
10	2		Yoga for Stress Management

Second Semester B.E., / CSD

Theory Courses with Laboratory Component

22MA201- Transforms & Numerical Methods	
COs	**Course Outcomes:** After the successful completion of the course, the student will be able to:
CO1	determine Laplace transform and inverse transform of simple functions.
CO2	determine Z- transform and inverse transform of simple functions.
CO3	solve ordinary differential equations using Laplace transform and difference equations using Z-Transform.
CO4	compute the solutions of algebraic, transcendental and the system of equations.
CO5	appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems

22CS201- Data Structures	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Implement abstract data types for list.
CO2	Solve real world problems using appropriate linear data structures.
CO3	Apply appropriate tree data structures in problem solving.
CO4	Implement appropriate Graph representations and solve real-world applications.
CO5	Implement various searching and sorting algorithms.

22PH201 - Physics for Computer Science and Information Technology	
COs	**Course Outcomes:** On completion of this course, the students will be able to:
CO1	Discuss the basic principles of working of laser and their applications in fibre optic communication
CO2	Summarize the classical and quantum electron theories and energy band structures
CO3	Describe the conductivity in intrinsic and extrinsic semiconductors and importance of Hall effect measurements
CO4	Associate the properties of nanoscale materials and their applications in quantum computing
CO5	Interpret the properties of magnetic and superconducting materials and their applications in computer data storage

22HS101- Professional Communication	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Comprehend conversations and short talks delivered in English
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques
CO3	Read articles of a general kind in magazines and newspapers efficiently
CO4	Write short general essays, personal letters and E-mails in English
CO5	Develop vocabulary of a general kind by enriching reading skills

22CS202- Java Programming	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Understand the object-oriented programming concepts and fundamentals of Java.
CO2	Develop Java programs with the packages, interfaces and exceptions.
CO3	Build Java applications with I/O streams, threads and generics programming.
CO4	Apply strings and collections in developing applications.
CO5	Implement the concepts of JDBC.

22IT202- Database Management Systems	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Map ER model to Relational model to perform database design effectively.
CO2	Implement SQL and effective relational database design concepts.
CO3	Apply relational algebra, calculus and normalization techniques in database design.
CO4	Understand the concepts of transaction processing, concurrency control, recovery procedure and data storage techniques.
CO5	Apply query optimization techniques and understand advanced databases.

Laboratory Courses

22ME211 - Product Development Lab - 2	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Understand the working and capacity of various engineering systems.
CO2	Infer the outcomes in the product development process.
CO3	Perform basic engineering and material characterization tests.
CO4	Demonstrate the ability to provide conceptual design strategies for a product.
CO5	Implement the Science, Engineering, Technology and Mathematics (STEM) for product design.

Mandatory Courses

22GE201 – Tamils and Technology	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Identify the role of weaving and ceramic technology in ancient Tamil Culture.
CO2	Assess the design and construction technology ideas in the current Tamil society.
CO3	Identify the different types of manufacturing technology used in Tamil society and their significance.
CO4	Classify agricultural and irrigation technologies in ancient Tamil society and its current relevance.
CO5	Discuss the fundamentals of scientific Tamil and Tamil computing.

22CH104 - Environmental Sciences and Sustainability	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Investigate and use conservational practices to protect natural resources.
CO2	Identify the causes of pollutants and illustrate suitable methods for pollution abatement.
CO3	Adapt the values of biodiversity and its conservation methods.
CO4	Recognize suitable sustainable development practices and apply it in day-to-day life.
CO5	Assess the impacts of human population and suggest suitable solutions.

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2023 -24

B.E., - Electronics and Communication (Advanced Communication Technology) – Even semester

THEORY COURSES WITH LABORATORY COMPONENT			
S.No	**Semester**	**Course code**	**Course Name**
1	2	22MA201	Transforms and Numerical Methods
2	2	22EC201	Electron Devices and Circuit Theory
3	2	22CH101	Engineering Chemistry
4	2	22CS201	Data Structures
5	2	22CS202	Java Programming
LABORATORY COURSES WITH THEORY COMPONENT			
6	2	22ME202	Computer Aided Engineering Graphics
LABORATORY COURSES			
7	2	22ME211	Product Development Lab- 2
MANDATORY COURSES			
8	2	22GE201	Tamils and Technology
AUDIT COURSES			
9	2		Yoga for Stress Management

Second Semester B.E., / ECE

Theory Courses with Laboratory Component

22MA201- Transforms & Numerical Methods	
COs	**Course Outcomes:** After the successful completion of the course, the student will be able to:
CO1	determine Laplace transform and inverse transform of simple functions.
CO2	determine Z- transform and inverse transform of simple functions.
CO3	solve ordinary differential equations using Laplace transform and difference equations using Z-Transform.
CO4	compute the solutions of algebraic, transcendental and the system of equations.
CO5	appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems

22EC201- Electron Devices and Circuit Theory	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to:
CO1	Examine the performance of electronic circuits using PN junction diode and Zener diode.
CO2	Construct electronic circuits using BJT and FET to sketch the input and output characteristics.
CO3	Demonstrate the behavior of special semiconductor devices in various applications.
CO4	Comprehend the impact of voltage and current in electric circuits using Mesh & Nodal methods.
CO5	Relate various network theorems to determine the response of the electric circuits.
CO6	Perform practical exercises as an individual and / or team member to manage the task in time.
CO7	Express the experimental results with effective presentation and report.

22CH101- Engineering Chemistry	
COs	**Course Outcomes:** On successful completion of this course, the students will be able to
CO1	Interpret the water quality parameters and explain the various water treatment methods.
CO2	Construct the electro chemical cells and sensors.
CO3	Compare different energy storage devices and predict their relevance in electric vehicles.
CO4	Classify different types of smart materials, their properties and applications in Engineering and Technology.
CO5	Integrate the concepts of nano chemistry and enumerate its applications in various fields.

22CS201- Data Structures	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Implement abstract data types for list.
CO2	Solve real world problems using appropriate linear data structures.
CO3	Apply appropriate tree data structures in problem solving.
CO4	Implement appropriate Graph representations and solve real-world applications.
CO5	Implement various searching and sorting algorithms.

22CS202- Java Programming	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Understand the object-oriented programming concepts and fundamentals of Java.
CO2	Develop Java programs with the packages, interfaces and exceptions.
CO3	Build Java applications with I/O streams, threads and generics programming.
CO4	Apply strings and collections in developing applications.
CO5	Implement the concepts of JDBC.

Laboratory Courses with Theory Component

22ME202 - Computer Aided Engineering Graphics	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to
CO1	Explain the various engineering standards required for drafting and exploreknowledge in conic sections.
CO2	Draw the orthographic views of 3D primitive objects.
CO3	Describe the projection of plane surfaces by the rotating plane method.
CO4	Apply the projection concepts and drafting tools to draw projections of solids.
CO5	Sketch the pictorial views of the objects using CAD tools.

Laboratory Courses

22ME211 - Product Development Lab - 2	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Understand the working and capacity of various engineering systems.
CO2	Infer the outcomes in the product development process.
CO3	Perform basic engineering and material characterization tests.
CO4	Demonstrate the ability to provide conceptual design strategies for a product.
CO5	Implement the Science, Engineering, Technology and Mathematics (STEM) for product design.

Mandatory Courses

22GE201 – Tamils and Technology	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Identify the role of weaving and ceramic technology in ancient Tamil Culture.
CO2	Assess the design and construction technology ideas in the current Tamil society.
CO3	Identify the different types of manufacturing technology used in Tamil society and their significance.
CO4	Classify agricultural and irrigation technologies in ancient Tamil society and its current relevance.
CO5	Discuss the fundamentals of scientific Tamil and Tamil computing.

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2023 -24

B.E., - Electronics Engineering (VLSI Design and Technology) – Even semester

THEORY COURSES WITH LABORATORY COMPONENT			
S.No	**Semester**	**Course code**	**Course Name**
1	2	22MA201	Transforms and Numerical Methods
2	2	22EC201	Electron Devices and Circuit Theory
3	2	22CH101	Engineering Chemistry
4	2	22CS201	Data Structures
5	2	22CS202	Java Programming
LABORATORY COURSES WITH THEORY COMPONENT			
6	2	22ME202	Computer Aided Engineering Graphics
LABORATORY COURSES			
7	2	22ME211	Product Development Lab- 2
MANDATORY COURSES			
8	2	22GE201	Tamils and Technology
AUDIT COURSES			
9	2		Yoga for Stress Management

Second Semester B.E., / ECE

Theory Courses with Laboratory Component

22MA201- Transforms & Numerical Methods	
COs	**Course Outcomes:** After the successful completion of the course, the student will be able to:
CO1	determine Laplace transform and inverse transform of simple functions.
CO2	determine Z- transform and inverse transform of simple functions.
CO3	solve ordinary differential equations using Laplace transform and difference equations using Z-Transform.
CO4	compute the solutions of algebraic, transcendental and the system of equations.
CO5	appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems

22EC201- Electron Devices and Circuit Theory	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to:
CO1	Examine the performance of electronic circuits using PN junction diode and Zener diode.
CO2	Construct electronic circuits using BJT and FET to sketch the input and output characteristics.
CO3	Demonstrate the behavior of special semiconductor devices in various applications.
CO4	Comprehend the impact of voltage and current in electric circuits using Mesh & Nodal methods.
CO5	Relate various network theorems to determine the response of the electric circuits.
CO6	Perform practical exercises as an individual and / or team member to manage the task in time.
CO7	Express the experimental results with effective presentation and report.

22CH101- Engineering Chemistry	
COs	**Course Outcomes:** On successful completion of this course, the students will be able to
CO1	Interpret the water quality parameters and explain the various water treatment methods.
CO2	Construct the electro chemical cells and sensors.
CO3	Compare different energy storage devices and predict their relevance in electric vehicles.
CO4	Classify different types of smart materials, their properties and applications in Engineering and Technology.
CO5	Integrate the concepts of nano chemistry and enumerate its applications in various fields.

22CS201- Data Structures	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Implement abstract data types for list.
CO2	Solve real world problems using appropriate linear data structures.
CO3	Apply appropriate tree data structures in problem solving.
CO4	Implement appropriate Graph representations and solve real-world applications.
CO5	Implement various searching and sorting algorithms.

22CS202- Java Programming	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Understand the object-oriented programming concepts and fundamentals of Java.
CO2	Develop Java programs with the packages, interfaces and exceptions.
CO3	Build Java applications with I/O streams, threads and generics programming.
CO4	Apply strings and collections in developing applications.
CO5	Implement the concepts of JDBC.

Laboratory Courses with Theory Component

22ME202 - Computer Aided Engineering Graphics	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to
CO1	Explain the various engineering standards required for drafting and exploreknowledge in conic sections.
CO2	Draw the orthographic views of 3D primitive objects.
CO3	Describe the projection of plane surfaces by the rotating plane method.
CO4	Apply the projection concepts and drafting tools to draw projections of solids.
CO5	Sketch the pictorial views of the objects using CAD tools.

Laboratory Courses

22ME211 - Product Development Lab - 2	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Understand the working and capacity of various engineering systems.
CO2	Infer the outcomes in the product development process.
CO3	Perform basic engineering and material characterization tests.
CO4	Demonstrate the ability to provide conceptual design strategies for a product.
CO5	Implement the Science, Engineering, Technology and Mathematics (STEM) for product design.

Mandatory Courses

22GE201 – Tamils and Technology	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Identify the role of weaving and ceramic technology in ancient Tamil Culture.
CO2	Assess the design and construction technology ideas in the current Tamil society.
CO3	Identify the different types of manufacturing technology used in Tamil society and their significance.
CO4	Classify agricultural and irrigation technologies in ancient Tamil society and its current relevance.
CO5	Discuss the fundamentals of scientific Tamil and Tamil computing.

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2023 -24

B.Tech. - Artificial Intelligence & Data Science – Even semester

THEORY COURSES WITH LABORATORY COMPONENT			
S.No	**Semester**	**Course code**	**Course Name**
1	2	22MA201	Transforms and Numerical Methods
2	2	22CS201	Data Structures
3	2	22PH201	Physics for Computer Science and Information Technology
4	2	22HS101	Professional Communication
5	2	22CS202	Java Programming
6	2	22IT202	Database Management System
LABORATORY COURSE			
7	2	22ME211	Product Development Lab - 2
MANDATORY COURSES			
8	2	22GE201	Tamils and Technology
9	2	22CH104	Environmental Sciences and Sustainability (Non-Credit)
AUDIT COURSE			
10	2		Yoga for Stress Management

Second Semester B.Tech. / ADS

Theory Courses with Laboratory Component

22MA201- Transforms & Numerical Methods	
COs	**Course Outcomes:** After the successful completion of the course, the student will be able to:
CO1	determine Laplace transform and inverse transform of simple functions.
CO2	determine Z- transform and inverse transform of simple functions.
CO3	solve ordinary differential equations using Laplace transform and difference equations using Z-Transform.
CO4	compute the solutions of algebraic, transcendental and the system of equations.
CO5	appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems

22CS201- Data Structures	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Implement abstract data types for list.
CO2	Solve real world problems using appropriate linear data structures.
CO3	Apply appropriate tree data structures in problem solving.
CO4	Implement appropriate Graph representations and solve real-world applications.
CO5	Implement various searching and sorting algorithms.

22PH201 - Physics for Computer Science and Information Technology	
COs	**Course Outcomes:** On completion of this course, the students will be able to:
CO1	Discuss the basic principles of working of laser and their applications in fibre optic communication
CO2	Summarize the classical and quantum electron theories and energy band structures
CO3	Describe the conductivity in intrinsic and extrinsic semiconductors and importance of Hall effect measurements
CO4	Associate the properties of nanoscale materials and their applications in quantum computing
CO5	Interpret the properties of magnetic and superconducting materials and their applications in computer data storage

22HS101- Professional Communication	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Comprehend conversations and short talks delivered in English
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques
CO3	Read articles of a general kind in magazines and newspapers efficiently
CO4	Write short general essays, personal letters and E-mails in English
CO5	Develop vocabulary of a general kind by enriching reading skills

22CS202- Java Programming	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Understand the object-oriented programming concepts and fundamentals of Java.
CO2	Develop Java programs with the packages, interfaces and exceptions.
CO3	Build Java applications with I/O streams, threads and generics programming.
CO4	Apply strings and collections in developing applications.
CO5	Implement the concepts of JDBC.

22IT202- Database Management Systems	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Map ER model to Relational model to perform database design effectively.
CO2	Implement SQL and effective relational database design concepts.
CO3	Apply relational algebra, calculus and normalization techniques in database design.
CO4	Understand the concepts of transaction processing, concurrency control, recovery procedure and data storage techniques.
CO5	Apply query optimization techniques and understand advanced databases.

Laboratory Courses

22ME211 - Product Development Lab - 2	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Understand the working and capacity of various engineering systems.
CO2	Infer the outcomes in the product development process.
CO3	Perform basic engineering and material characterization tests.
CO4	Demonstrate the ability to provide conceptual design strategies for a product.
CO5	Implement the Science, Engineering, Technology and Mathematics (STEM) for product design.

Mandatory Courses

22GE201 – Tamils and Technology	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Identify the role of weaving and ceramic technology in ancient Tamil Culture.
CO2	Assess the design and construction technology ideas in the current Tamil society.
CO3	Identify the different types of manufacturing technology used in Tamil society and their significance.
CO4	Classify agricultural and irrigation technologies in ancient Tamil society and its current relevance.
CO5	Discuss the fundamentals of scientific Tamil and Tamil computing.

22CH104 - Environmental Sciences and Sustainability	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Investigate and use conservational practices to protect natural resources.
CO2	Identify the causes of pollutants and illustrate suitable methods for pollution abatement.
CO3	Adapt the values of biodiversity and its conservation methods.
CO4	Recognize suitable sustainable development practices and apply it in day-to-day life.
CO5	Assess the impacts of human population and suggest suitable solutions.

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2023 -24

B.Tech. - Computer Science and Business systems – Even semester

THEORY COURSES			
S.No	**Semester**	**Course code**	**Course Name**
1	2	22MA202	Linear Algebra
LAB INTEGRATED THEORY COURSES			
2	2	22MA203	Statistical Methods
3	2	22CB201	Data Structures and Algorithms
4	2	22CS202	Java Programming
5	2	22EC202	Principles of Electronics Engineering
6	2	22HS101	Professional Communication
LABORATORY COURSES			
7	2	22ME211	Product Development Lab-2
MANDATORY COURSES			
8	2	22GE201	Tamils and Technology
9	2	22CH104	Environmental Sciences (Non-Credit)
AUDIT COURSES			
10	2		Yoga for Stress Management

Second Semester B.Tech. / CSBS

Theory courses

22MA202 – Linear Algebra	
COs	**Course Outcomes:** After the successful completion of the course, the student will be able to:
CO1	solve the system of linear equations using Cramer's rule.
CO2	solve the system of equations using LU Decomposition method.
CO3	compute QR decomposition for a given matrix.
CO4	represent the linear transformations in matrix and to find Eigenvalues and Eigenvectors.
CO5	apply the concept of linear combinations in image processing and Machine learning.

Lab Integrated Theory Courses

22MA203- Statistical Methods	
COs	**Course Outcomes:**After the successful completion of the course, the student will be able to:
CO1	find the standard error and sample mean of the sampling distributions.
CO2	identify and evaluate the unbiased estimators.
CO3	compute correlation and regression curve.
CO4	apply testing of hypotheses to real-life problems.
CO5	analyze the ARIMA model and apply it to real-life situations.

22CB201 - Data Structures and Algorithms	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to:
CO1	Analyse the various data structure concepts.
CO2	Apply the different linear data structures to problem solutions.
CO3	Apply the tree non-linear data structures to problem solutions.
CO4	Apply the graph and file non-linear data structures to problem solutions
CO5	Critically analyse the various sorting algorithms.

22CS202- Java Programming	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Understand the object-oriented programming concepts and fundamentals of Java.
CO2	Develop Java programs with the packages, interfaces and exceptions.
CO3	Build Java applications with I/O streams, threads and generics programming.
CO4	Apply strings and collections in developing applications.
CO5	Implement the concepts of JDBC.

22EC202- Principles of Electronics Engineering	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to:
CO1	Examine the performance of electronic circuits using PN junction diode and Zener diodes
CO2	Construct electronic circuits using BJT and to sketch the input and output characteristics.
CO3	Examine the terminal characteristics of FET and MOSFET
CO4	Acquire the knowledge on feedback amplifiers and operational amplifiers.
CO5	Design of simple Digital Logic Circuits.
CO6	Perform practical exercises as an individual and / or team member to manage the task in time.
CO7	Express the experimental results with effective presentation and report.

22HS101- Professional Communication	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Comprehend conversations and short talks delivered in English
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques
CO3	Read articles of a general kind in magazines and newspapers efficiently
CO4	Write short general essays, personal letters and E-mails in English
CO5	Develop vocabulary of a general kind by enriching reading skills

Laboratory Courses

22ME211 - Product Development Lab - 2	
COs	**Course Outcomes:** After successful completion of the course, the students will be able to:
CO1	Understand the working and capacity of various engineering systems.
CO2	Infer the outcomes in the product development process.
CO3	Perform basic engineering and material characterization tests.
CO4	Demonstrate the ability to provide conceptual design strategies for a product.
CO5	Implement the Science, Engineering, Technology and Mathematics (STEM) for product design.

Mandatory Courses

22GE201 – Tamils and Technology	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Identify the role of weaving and ceramic technology in ancient Tamil Culture.
CO2	Assess the design and construction technology ideas in the current Tamil society.
CO3	Identify the different types of manufacturing technology used in Tamil society and their significance.
CO4	Classify agricultural and irrigation technologies in ancient Tamil society and its current relevance.
CO5	Discuss the fundamentals of scientific Tamil and Tamil computing.

22CH104 - Environmental Sciences and Sustainability	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Investigate and use conservational practices to protect natural resources.
CO2	Identify the causes of pollutants and illustrate suitable methods for pollution abatement.
CO3	Adapt the values of biodiversity and its conservation methods.
CO4	Recognize suitable sustainable development practices and apply it in day-to-day life.
CO5	Assess the impacts of human population and suggest suitable solutions.

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester – 2023-24

B.Tech. - Information Technology – Even semester

THEORY COURSES WITH LABORATORY COMPONENT			
S.No	**Semester**	**Course code**	**Course Name**
1	2	22MA201	Transforms and Numerical Methods
2	2	22CS201	Data Structures
3	2	22PH201	Physics for Computer Science and Information Technology
4	2	22HS101	Professional Communication
5	2	22CS202	Java Programming
6	2	22IT202	Database Management System
LABORATORY COURSES			
7	2	22ME211	Product Development Lab - 2
MANDATORY COURSES			
8	2	22GE201	Tamils and Technology
9	2	22CH104	Environmental Sciences and Sustainability (Non-Credit)
AUDIT COURSES			
10	2		Yoga for Stress Management

Second Semester B.Tech. / IT

Theory Courses with Laboratory Component

22MA201- Transforms & Numerical Methods	
COs	**Course Outcomes:** After the successful completion of the course, the student will be able to:
CO1	determine Laplace transform and inverse transform of simple functions.
CO2	determine Z- transform and inverse transform of simple functions.
CO3	solve ordinary differential equations using Laplace transform and difference equations using Z-Transform.
CO4	compute the solutions of algebraic, transcendental and the system of equations.
CO5	appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems

22CS201- Data Structures	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Implement abstract data types for list.
CO2	Solve real world problems using appropriate linear data structures.
CO3	Apply appropriate tree data structures in problem solving.
CO4	Implement appropriate Graph representations and solve real-world applications.
CO5	Implement various searching and sorting algorithms.

22PH201 - Physics for Computer Science and Information Technology	
COs	**Course Outcomes:** On completion of this course, the students will be able to:
CO1	Discuss the basic principles of working of laser and their applications in fibre optic communication
CO2	Summarize the classical and quantum electron theories and energy band structures
CO3	Describe the conductivity in intrinsic and extrinsic semiconductors and importance of Hall effect measurements
CO4	Associate the properties of nanoscale materials and their applications in quantum computing
CO5	Interpret the properties of magnetic and superconducting materials and their applications in computer data storage

22HS101- Professional Communication	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Comprehend conversations and short talks delivered in English
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques
CO3	Read articles of a general kind in magazines and newspapers efficiently
CO4	Write short general essays, personal letters and E-mails in English
CO5	Develop vocabulary of a general kind by enriching reading skills

22CS202- Java Programming	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Understand the object-oriented programming concepts and fundamentals of Java.
CO2	Develop Java programs with the packages, interfaces and exceptions.
CO3	Build Java applications with I/O streams, threads and generics programming.
CO4	Apply strings and collections in developing applications.
CO5	Implement the concepts of JDBC.

22IT202- Database Management Systems	
COs	**Course Outcomes:** At the end of this course, the students will be able to:
CO1	Map ER model to Relational model to perform database design effectively.
CO2	Implement SQL and effective relational database design concepts.
CO3	Apply relational algebra, calculus and normalization techniques in database design.
CO4	Understand the concepts of transaction processing, concurrency control, recovery procedure and data storage techniques.
CO5	Apply query optimization techniques and understand advanced databases.

Laboratory Courses

22ME211 - Product Development Lab - 2	
COs	**Course Outcomes: After successful completion of the course, the students will be able to:**
CO1	Understand the working and capacity of various engineering systems.
CO2	Infer the outcomes in the product development process.
CO3	Perform basic engineering and material characterization tests.
CO4	Demonstrate the ability to provide conceptual design strategies for a product.
CO5	Implement the Science, Engineering, Technology and Mathematics (STEM) for product design.

Mandatory Courses

22GE201 – Tamils and Technology	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Identify the role of weaving and ceramic technology in ancient Tamil Culture.
CO2	Assess the design and construction technology ideas in the current Tamil society.
CO3	Identify the different types of manufacturing technology used in Tamil society and their significance.
CO4	Classify agricultural and irrigation technologies in ancient Tamil society and its current relevance.
CO5	Discuss the fundamentals of scientific Tamil and Tamil computing.

22CH104 - Environmental Sciences and Sustainability	
COs	**Course Outcomes:** Upon completion of the course, the students will be able to
CO1	Investigate and use conservational practices to protect natural resources.
CO2	Identify the causes of pollutants and illustrate suitable methods for pollution abatement.
CO3	Adapt the values of biodiversity and its conservation methods.
CO4	Recognize suitable sustainable development practices and apply it in day-to-day life.
CO5	Assess the impacts of human population and suggest suitable solutions.