



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 – Odd semester - 2020 -21

B.E., - Civil Engineering – 1st semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	1	Theory	20EL101 - Communicative English & Life Skills
2.	1	Theory	20MA101 - Engineering Mathematics – I
3.	1	Theory	20ME103 - Computer Aided Engineering Graphics
4.	1	Theory	20CH102 - Environmental Science and Engineering
5.	1	Theory	20GE101 - Problem solving and C Programming
6.	1	Theory	20EE101 - Basic Electrical, Electronics and Instrumentation Engineering
7.	1	Practical	20EM111 - Engineering Practices Lab
8.	1	Practical	20GE111- C Programming Lab
9	1	Practical	20EL111 - Interpersonal Skills - Listening and Speaking Lab

First Semester B.E., / CE

20EL101 - Communicative English & Life Skills	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read articles of a general kind in magazines and newspapers efficiently and identify different life skills.
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.
CO3	Comprehend conversations and short talks delivered in English.
CO4	Write short essays of a general kind and personal letters and emails in English.
CO5	Develop vocabulary of a general kind by enriching their reading skills.
CO6	Use appropriate thinking and problem- solving techniques to solve new problems.

20MA101-Engineering Mathematics - I	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Diagonalize a matrix by orthogonal transformation.
CO2	Determine the Evolute and Envelope of curves.
CO3	Examine the maxima and minima of function of several variables.
CO4	Apply Gamma and Beta integrals to evaluate improper integrals.
CO5	Evaluate the area and volume by using multiple integrals.

20ME103 - Computer Aided Engineering Graphics	
COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Illustrate the fundamentals and standards of engineering drawing and apply the concepts of orthographic projections using CAD software
CO2	Interpret and construct various plane curves
CO3	Develop orthographic projections of points, lines and plane surfaces.
CO4	Make use of concepts in projection to draw projections of solids and interpret the concept in section of solids.
CO5	Interpret and visualize development of surfaces.
CO6	Interpret and visualize isometric projection of simple solids

20CH102-Environmental Science and Engineering	
COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Illustrate the importance and conservation of natural resources.
CO2	Assess the impact of various pollutants and suggest appropriate pollution control methods.
CO3	Explain the basic structure of ecosystem and the conservation of biodiversity.
CO4	Analyze the social issues related to environment and recommend suitable solutions.
CO5	Investigate the trends in population explosion and assess its impact.

20GE101 - Problem solving and C Programming	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Develop algorithmic solutions to simple computational problems
CO2	Develop simple applications using basic constructs
CO3	Write programs using arrays and strings
CO4	Design and implement applications using functions, pointers and structures.
CO5	Design applications using sequential and random-access file processing.

20EE101- Basic Electrical, Electronics and Instrumentation Engineering	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Analyze the DC and AC electrical circuits and its components using fundamental laws.
CO2	Analyze the performance characteristics of electrical machines.
CO3	Design rectifiers and amplifiers using semiconductor devices and IC's.
CO4	Design and analyze the digital logic circuits and converters
CO5	Choose suitable transducers for measuring specific physical quantities
CO6	Select appropriate indicating instrument for measuring electrical quantities

Laboratory

20EM111 - Engineering Practices Laboratory	
COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Develop carpentry components and pipe connections including plumbing works.
CO2	Make use of welding equipments to join the structures
CO3	Analyse the basic machining operations
CO4	Develop the models using sheet metal works
CO5	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundry
CO6	and fittings
CO7	Fabricate carpentry components and pipe connections including plumbing works.
CO8	Carry out simple wiring as per the layout given
CO9	Measures various electrical parameters like Voltage, Current, Power factor, Energy, Earth resistance etc.

20GE111 - C Programming Lab	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Write programs for simple applications making use of basic constructs, arrays and strings.
CO2	Develop programs involving functions, recursion, pointers, and structures.
CO3	Create applications using sequential and random access file processing.

20EL111-Interpersonal Skills - Listening and Speaking Lab	
COs	Course Outcome: At the end of the course learners will be able to
CO1	Listen and respond appropriately.
CO2	Participate in group discussions.
CO3	Make effective presentations.
CO4	Participate confidently and appropriately in conversations both formal and informal.
CO5	Utilize mass media and technology effectively.
CO6	Interpret contextual knowledge clearly.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Odd semester - 2020 -21

B.E., - Computer Science Engineering – 1st semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	1	Theory	20EL101 - Communicative English & Life Skills
2.	1	Theory	20MA101 - Engineering Mathematics – I
3.	1	Theory	20PH101 - Physics for Computer Science and Information Technology
4.	1	Theory	20CH101 - Engineering Chemistry
5.	1	Theory	20GE101 - Problem solving and C Programming
6.	1	Theory	20EE102 - Basic Electrical, Electronics & Measurements Engineering
7.	1	Practical	20PC111 - Physics & Chemistry Laboratory
8.	1	Practical	20GE111- C Programming Lab
9.	1	Practical	20EL111 - Interpersonal Skills - Listening and Speaking Lab

First Semester B.E., / CSE

20EL101 - Communicative English & Life Skills	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read articles of a general kind in magazines and newspapers efficiently and identify different life skills.
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.
CO3	Comprehend conversations and short talks delivered in English.
CO4	Write short essays of a general kind and personal letters and emails in English.
CO5	Develop vocabulary of a general kind by enriching their reading skills.
CO6	Use appropriate thinking and problem- solving techniques to solve new problems.

20MA101-Engineering Mathematics - I	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Diagonalize a matrix by orthogonal transformation.
CO2	Determine the Evolute and Envelope of curves.
CO3	Examine the maxima and minima of function of several variables.
CO4	Apply Gamma and Beta integrals to evaluate improper integrals.
CO5	Evaluate the area and volume by using multiple integrals.

20PH101-Physics for Computer Science and Information Technology	
COs	Course Outcome: On completion of this course, the students will gain knowledge and will be able to
CO1	know the principle, construction and working of lasers and their applications in fibre optic communication.
CO2	understand the magnetic properties of materials and their specific applications in computer data storage.
CO3	analyze the classical and quantum electron theories and energy band structures.
CO4	evaluate the conducting properties of semiconductors and its applications in various devices.
CO5	comprehend the knowledge on quantum confinement effects.
CO6	apply optical, magnetic and conducting properties of materials, quantum concepts at the nanoscale in various applications

20CH101-Engineering Chemistry	
COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Illustrate the role of chemistry in everyday life and the industrial uses of water.
CO2	Construct electrochemical cells and to determine the cell potential.
CO3	Compare and analyse the different energy storage devices and to explain potential energy sources.
CO4	Classify different types of polymeric materials and to discuss their properties and applications.
CO5	Explain basic concepts of nanochemistry and to enumerate the applications of nanomaterials in engineering and technology.

20GE101 - Problem solving and C Programming	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Develop algorithmic solutions to simple computational problems
CO2	Develop simple applications using basic constructs
CO3	Write programs using arrays and strings
CO4	Design and implement applications using functions, pointers and structures.
CO5	Design applications using sequential and random-access file processing.

20EE102 - Basic Electrical, Electronics & Measurements Engineering	
COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Analyze the essentials of electric circuits
CO2	Study the different types of renewable sources and common domestic loads
CO3	Classify the different types of electric machines and transformers
CO4	Acquire the knowledge in basics of electronic circuits
CO5	Describe the different types of measuring instruments and transducers

Laboratory

20PC111-Physics & Chemistry Lab	
COs	Course Outcome: Upon completion of the course, based on hands-on experience of the students, they will be able to
CO1	Determine the wavelength of mercury spectrum and also determine the wavelength of a laser source, particle size, divergence angle of semiconductor laser source using diffraction grating and to analyze the numerical aperture and acceptance angle of an optical fibre.
CO2	Examine the Young's modulus of a beam by uniform and non-uniform bending and to estimate the moment of inertia of the disc and rigidity modulus of wire by torsional pendulum.
CO3	Determine the band gap of a semiconductor.
CO4	Analyse the given hard water sample, change in conductivity of an acid(s) when added with base.
CO5	Examine the change in pH when an acid is added with a base, Understand the redox reactions and its impact on emf values.
CO6	Assess the corrosion rate of a given metal, construct an electrochemical cell to determine the concentration of the given solution.

20GE111 - C Programming Lab	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Write programs for simple applications making use of basic constructs, arrays and strings.
CO2	Develop programs involving functions, recursion, pointers, and structures.
CO3	Create applications using sequential and random access file processing.

20EL111-Interpersonal Skills - Listening and Speaking Lab	
COs	Course Outcome: At the end of the course learners will be able to
CO1	Listen and respond appropriately.
CO2	Participate in group discussions.
CO3	Make effective presentations.
CO4	Participate confidently and appropriately in conversations both formal and informal.
CO5	Utilize mass media and technology effectively.
CO6	Interpret contextual knowledge clearly.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Odd semester - 2020 -21

B.E., - Electrical and Electronics Engineering – 1st semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	1	Theory	20EL101 - Communicative English & Life Skills
2.	1	Theory	20MA101 - Engineering Mathematics – I
3.	1	Theory	20ME103 - Computer Aided Engineering Graphics
4.	1	Theory	20CH102 - Environmental Science and Engineering
5.	1	Theory	20GE101 - Problem solving and C Programming
6.	1	Theory	20CM106 - Basic Civil & Mechanical Engineering
7.	1	Practical	20GE111 - C Programming Lab
8	1	Practical	20EL112 - Listening, Speaking, Reading and Writing Lab

First Semester B.E., / EEE

20EL101 - Communicative English & Life Skills	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read articles of a general kind in magazines and newspapers efficiently and identify different life skills.
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.
CO3	Comprehend conversations and short talks delivered in English.
CO4	Write short essays of a general kind and personal letters and emails in English.
CO5	Develop vocabulary of a general kind by enriching their reading skills.
CO6	Use appropriate thinking and problem- solving techniques to solve new problems.

20MA101-Engineering Mathematics - I	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Diagonalize a matrix by orthogonal transformation.
CO2	Determine the Evolute and Envelope of curves.
CO3	Examine the maxima and minima of function of several variables.
CO4	Apply Gamma and Beta integrals to evaluate improper integrals.
CO5	Evaluate the area and volume by using multiple integrals.

20ME103 - Computer Aided Engineering Graphics	
COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Illustrate the fundamentals and standards of engineering drawing and apply the concepts of orthographic projections using CAD software
CO2	Interpret and construct various plane curves
CO3	Develop orthographic projections of points, lines and plane surfaces.
CO4	Make use of concepts in projection to draw projections of solids and interpret the concept in section of solids.
CO5	Interpret and visualize development of surfaces.
CO6	Interpret and visualize isometric projection of simple solids

20CH102-Environmental Science and Engineering

COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Illustrate the importance and conservation of natural resources.
CO2	Assess the impact of various pollutants and suggest appropriate pollution control methods.
CO3	Explain the basic structure of ecosystem and the conservation of biodiversity.
CO4	Analyze the social issues related to environment and recommend suitable solutions.
CO5	Investigate the trends in population explosion and assess its impact.

20GE101 - Problem solving and C Programming

COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Develop algorithmic solutions to simple computational problems
CO2	Develop simple applications using basic constructs
CO3	Write programs using arrays and strings
CO4	Design and implement applications using functions, pointers and structures.
CO5	Design applications using sequential and random-access file processing.

20CM106 - Basic Civil & Mechanical Engineering

COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Apply the knowledge on Civil engineering fundamentals for practical applications
CO2	Understand various building components, structures and infrastructural facilities
CO3	Elaborate the mechanical engineering fundamentals for practical applications and Air Standard cycles
CO4	Identify the components used in power plant cycle
CO5	Interpret the working principles of petrol and diesel engine.
CO6	Elaborate the components of refrigeration and Air conditioning cycle

Laboratory

20GE111 - C Programming Lab	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Write programs for simple applications making use of basic constructs, arrays and strings.
CO2	Develop programs involving functions, recursion, pointers, and structures.
CO3	Create applications using sequential and random access file processing.

20EL112-Interpersonal Skills – Listening, Speaking, Reading and Writing Lab	
COs	Course Outcome: At the end of the course learners will be able to
CO1	Listen and respond appropriately.
CO2	Participate in group discussions and make effective presentations.
CO3	Read and comprehend various texts effectively.
CO4	Participate confidently and appropriately in conversations, both formal and informal.
CO5	Utilize mass media and technology effectively.
CO6	Develop writing skills and enrich their reading skills.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Odd semester - 2020 -21

B.E., - Electronics and Communication Engineering – 1st semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	1	Theory	20EL101 - Communicative English & Life Skills
2.	1	Theory	20MA101 - Engineering Mathematics – I
3.	1	Theory	20PH102 - Physics for Electronics Engineering
4.	1	Theory	20CH101 - Engineering Chemistry
5.	1	Theory	20GE101 - Problem solving and C Programming
6.	1	Theory	20ME103 - Computer Aided Engineering Graphics
7.	1	Practical	20PC111 - Physics & Chemistry Laboratory
8.	1	Practical	20GE111 - C Programming Lab
9.	1	Practical	20EL111 - Interpersonal Skills - Listening and Speaking Lab

First Semester B.E., / ECE

20EL101 - Communicative English & Life Skills	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read articles of a general kind in magazines and newspapers efficiently and identify different life skills.
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.
CO3	Comprehend conversations and short talks delivered in English.
CO4	Write short essays of a general kind and personal letters and emails in English.
CO5	Develop vocabulary of a general kind by enriching their reading skills.
CO6	Use appropriate thinking and problem- solving techniques to solve new problems.

20MA101-Engineering Mathematics - I	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Diagonalize a matrix by orthogonal transformation.
CO2	Determine the Evolute and Envelope of curves.
CO3	Examine the maxima and minima of function of several variables.
CO4	Apply Gamma and Beta integrals to evaluate improper integrals.
CO5	Evaluate the area and volume by using multiple integrals.

20PH102-Physics for Electronics Engineering	
COs	Course Outcome : On completion of this course, the students will be able to
CO1	estimate the conducting properties of materials based on CFE and QFE theories and understand the formation of energy band structures.
CO2	understand the basic properties of semiconducting materials and apply the concepts to determine Hall coefficient.
CO3	elucidate the principle and working of various opto and nanoelectronic devices and their applications.
CO4	attain basic knowledge on the concepts of lasers and apply in fibre optics communication.
CO5	correlate electric and magnetic field behavior of electro-magnetostatics and electro-dynamics.
CO6	understand the concepts of conducting materials, semiconducting materials and apply the same to determine resistivity and bandgap, explicate the principle and working of opto and nanoelectronic devices and analyze Maxwell's equation in different forms (differential and integral) in Electro-Magnetostatics and Electro-dynamics.

20CH101-Engineering Chemistry	
COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Illustrate the role of chemistry in everyday life and the industrial uses of water.
CO2	Construct electrochemical cells and to determine the cell potential.
CO3	Compare and analyse the different energy storage devices and to explain potential energy sources.
CO4	Classify different types of polymeric materials and to discuss their properties and applications.
CO5	Explain basic concepts of nanochemistry and to enumerate the applications of nanomaterials in engineering and technology.

20GE101 - Problem solving and C Programming	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Develop algorithmic solutions to simple computational problems
CO2	Develop simple applications using basic constructs
CO3	Write programs using arrays and strings
CO4	Design and implement applications using functions, pointers and structures.
CO5	Design applications using sequential and random-access file processing.

20ME103 - Computer Aided Engineering Graphics	
COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Illustrate the fundamentals and standards of engineering drawing and apply the concepts of orthographic projections using CAD software
CO2	Interpret and construct various plane curves
CO3	Develop orthographic projections of points, lines and plane surfaces.
CO4	Make use of concepts in projection to draw projections of solids and interpret the concept in section of solids.
CO5	Interpret and visualize development of surfaces.
CO6	Interpret and visualize isometric projection of simple solids

Laboratory

20PC111-Physics & Chemistry Lab	
COs	Course Outcome: Upon completion of the course, based on hands-on experience of the students, they will be able to
CO1	Determine the wavelength of mercury spectrum and also determine the wavelength of a laser source, particle size, divergence angle of semiconductor laser source using diffraction grating and to analyze the numerical aperture and acceptance angle of an optical fibre.
CO2	Examine the Young's modulus of a beam by uniform and non-uniform bending and to estimate the moment of inertia of the disc and rigidity modulus of wire by torsional pendulum.
CO3	Determine the band gap of a semiconductor.
CO4	Analyse the given hard water sample, change in conductivity of an acid(s) when added with base.
CO5	Examine the change in pH when an acid is added with a base, Understand the redox reactions and its impact on emf values.
CO6	Assess the corrosion rate of a given metal, construct an electrochemical cell to determine the concentration of the given solution.

20GE111 - C Programming Lab	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Write programs for simple applications making use of basic constructs, arrays and strings.
CO2	Develop programs involving functions, recursion, pointers, and structures.
CO3	Create applications using sequential and random access file processing.

20EL111-Interpersonal Skills - Listening and Speaking Lab	
COs	Course Outcome: At the end of the course learners will be able to
CO1	Listen and respond appropriately.
CO2	Participate in group discussions.
CO3	Make effective presentations.
CO4	Participate confidently and appropriately in conversations both formal and informal.
CO5	Utilize mass media and technology effectively.
CO6	Interpret contextual knowledge clearly.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Odd semester - 2020 -21

B.E., - Electronics and Instrumentation Engineering – 1st semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	1	Theory	20EL101 - Communicative English & Life Skills
2.	1	Theory	20MA101 - Engineering Mathematics – I
3.	1	Theory	20ME103 - Computer Aided Engineering Graphics
4.	1	Theory	20CH102 - Environmental Science and Engineering
5.	1	Theory	20GE101 - Problem solving and C Programming
6.	1	Theory	20CM106 - Basic Civil & Mechanical Engineering
7.	1	Practical	20GE111 - C Programming Lab
8	1	Practical	20EL112 - Listening, Speaking, Reading and Writing Lab

First Semester B.E., / EIE

20EL101 - Communicative English & Life Skills	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read articles of a general kind in magazines and newspapers efficiently and identify different life skills.
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.
CO3	Comprehend conversations and short talks delivered in English.
CO4	Write short essays of a general kind and personal letters and emails in English.
CO5	Develop vocabulary of a general kind by enriching their reading skills.
CO6	Use appropriate thinking and problem- solving techniques to solve new problems.

20MA101-Engineering Mathematics - I	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Diagonalize a matrix by orthogonal transformation.
CO2	Determine the Evolute and Envelope of curves.
CO3	Examine the maxima and minima of function of several variables.
CO4	Apply Gamma and Beta integrals to evaluate improper integrals.
CO5	Evaluate the area and volume by using multiple integrals.

20ME103 - Computer Aided Engineering Graphics	
COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Illustrate the fundamentals and standards of engineering drawing and apply the concepts of orthographic projections using CAD software
CO2	Interpret and construct various plane curves
CO3	Develop orthographic projections of points, lines and plane surfaces.
CO4	Make use of concepts in projection to draw projections of solids and interpret the concept in section of solids.
CO5	Interpret and visualize development of surfaces.
CO6	Interpret and visualize isometric projection of simple solids

20CH102-Environmental Science and Engineering

COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Illustrate the importance and conservation of natural resources.
CO2	Assess the impact of various pollutants and suggest appropriate pollution control methods.
CO3	Explain the basic structure of ecosystem and the conservation of biodiversity.
CO4	Analyze the social issues related to environment and recommend suitable solutions.
CO5	Investigate the trends in population explosion and assess its impact.

20GE101 - Problem solving and C Programming

COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Develop algorithmic solutions to simple computational problems
CO2	Develop simple applications using basic constructs
CO3	Write programs using arrays and strings
CO4	Design and implement applications using functions, pointers and structures.
CO5	Design applications using sequential and random-access file processing.

20CM106 - Basic Civil & Mechanical Engineering

COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Apply the knowledge on Civil engineering fundamentals for practical applications
CO2	Understand various building components, structures and infrastructural facilities
CO3	Elaborate the mechanical engineering fundamentals for practical applications and Air Standard cycles
CO4	Identify the components used in power plant cycle
CO5	Interpret the working principles of petrol and diesel engine.
CO6	Elaborate the components of refrigeration and Air conditioning cycle

Laboratory

20GE111 - C Programming Lab	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Write programs for simple applications making use of basic constructs, arrays and strings.
CO2	Develop programs involving functions, recursion, pointers, and structures.
CO3	Create applications using sequential and random access file processing.

20EL112-Interpersonal Skills – Listening, Speaking, Reading and Writing Lab	
COs	Course Outcome : At the end of the course learners will be able to
CO1	Listen and respond appropriately.
CO2	Participate in group discussions and make effective presentations.
CO3	Read and comprehend various texts effectively.
CO4	Participate confidently and appropriately in conversations, both formal and informal.
CO5	Utilize mass media and technology effectively.
CO6	Develop writing skills and enrich their reading skills.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Odd semester - 2020 -21

B.E., - Mechanical Engineering – 1st semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	1	Theory	20EL101 - Communicative English & Life Skills
2.	1	Theory	20MA101 - Engineering Mathematics – I
3.	1	Theory	20ME103 - Computer Aided Engineering Graphics
4.	1	Theory	20CH102 - Environmental Science and Engineering
5.	1	Theory	20GE101 - Problem solving and C Programming
6.	1	Theory	20EE101 - Basic Electrical, Electronics and Instrumentation Engineering
7.	1	Practical	20EM111 - Engineering Practices Lab
8.	1	Practical	20GE111 - C Programming Lab
9	1	Practical	20EL111 - Interpersonal Skills - Listening and Speaking Lab

First Semester B.E., / MECH

20EL101 - Communicative English & Life Skills	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read articles of a general kind in magazines and newspapers efficiently and identify different life skills.
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.
CO3	Comprehend conversations and short talks delivered in English.
CO4	Write short essays of a general kind and personal letters and emails in English.
CO5	Develop vocabulary of a general kind by enriching their reading skills.
CO6	Use appropriate thinking and problem- solving techniques to solve new problems.

20MA101-Engineering Mathematics - I	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Diagonalize a matrix by orthogonal transformation.
CO2	Determine the Evolute and Envelope of curves.
CO3	Examine the maxima and minima of function of several variables.
CO4	Apply Gamma and Beta integrals to evaluate improper integrals.
CO5	Evaluate the area and volume by using multiple integrals.

20ME103 - Computer Aided Engineering Graphics	
COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Illustrate the fundamentals and standards of engineering drawing and apply the concepts of orthographic projections using CAD software
CO2	Interpret and construct various plane curves
CO3	Develop orthographic projections of points, lines and plane surfaces.
CO4	Make use of concepts in projection to draw projections of solids and interpret the concept in section of solids.
CO5	Interpret and visualize development of surfaces.
CO6	Interpret and visualize isometric projection of simple solids

20CH102-Environmental Science and Engineering	
COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Illustrate the importance and conservation of natural resources.
CO2	Assess the impact of various pollutants and suggest appropriate pollution control methods.
CO3	Explain the basic structure of ecosystem and the conservation of biodiversity.
CO4	Analyze the social issues related to environment and recommend suitable solutions.
CO5	Investigate the trends in population explosion and assess its impact.

20GE101 - Problem solving and C Programming	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Develop algorithmic solutions to simple computational problems
CO2	Develop simple applications using basic constructs
CO3	Write programs using arrays and strings
CO4	Design and implement applications using functions, pointers and structures.
CO5	Design applications using sequential and random-access file processing.

20EE101- Basic Electrical, Electronics and Instrumentation Engineering	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Analyze the DC and AC electrical circuits and its components using fundamental laws.
CO2	Analyze the performance characteristics of electrical machines.
CO3	Design rectifiers and amplifiers using semiconductor devices and IC's.
CO4	Design and analyze the digital logic circuits and converters
CO5	Choose suitable transducers for measuring specific physical quantities
CO6	Select appropriate indicating instrument for measuring electrical quantities

Laboratory

20EM111 - Engineering Practices Laboratory	
COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Develop carpentry components and pipe connections including plumbing works.
CO2	Make use of welding equipments to join the structures
CO3	Analyse the basic machining operations
CO4	Develop the models using sheet metal works
CO5	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundry
CO6	and fittings
CO7	Fabricate carpentry components and pipe connections including plumbing works.
CO8	Carry out simple wiring as per the layout given
CO9	Measures various electrical parameters like Voltage, Current, Power factor, Energy, Earth resistance etc.

20GE111 - C Programming Lab	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Write programs for simple applications making use of basic constructs, arrays and strings.
CO2	Develop programs involving functions, recursion, pointers, and structures.
CO3	Create applications using sequential and random access file processing.

20EL111-Interpersonal Skills - Listening and Speaking Lab	
COs	Course Outcome: At the end of the course learners will be able to
CO1	Listen and respond appropriately.
CO2	Participate in group discussions.
CO3	Make effective presentations.
CO4	Participate confidently and appropriately in conversations both formal and informal.
CO5	Utilize mass media and technology effectively.
CO6	Interpret contextual knowledge clearly.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Odd semester - 2020 -21

B.Tech. - Information Technology – 1st semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	1	Theory	20EL101 - Communicative English & Life Skills
2.	1	Theory	20MA101 - Engineering Mathematics – I
3.	1	Theory	20PH101 - Physics for Computer Science and Information Technology
4.	1	Theory	20CH101 - Engineering Chemistry
5.	1	Theory	20GE101 - Problem solving and C Programming
6.	1	Theory	20EE102 - Basic Electrical, Electronics & Measurements Engineering
7.	1	Practical	20PC111 - Physics & Chemistry Laboratory
8.	1	Practical	20GE111 - C Programming Lab
9.	1	Practical	20EL111 - Interpersonal Skills - Listening and Speaking Lab

First Semester B.Tech. / IT

20EL101 - Communicative English & Life Skills	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read articles of a general kind in magazines and newspapers efficiently and identify different life skills.
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.
CO3	Comprehend conversations and short talks delivered in English.
CO4	Write short essays of a general kind and personal letters and emails in English.
CO5	Develop vocabulary of a general kind by enriching their reading skills.
CO6	Use appropriate thinking and problem- solving techniques to solve new problems.

20MA101-Engineering Mathematics - I	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Diagonalize a matrix by orthogonal transformation.
CO2	Determine the Evolute and Envelope of curves.
CO3	Examine the maxima and minima of function of several variables.
CO4	Apply Gamma and Beta integrals to evaluate improper integrals.
CO5	Evaluate the area and volume by using multiple integrals.

20PH101-Physics for Computer Science and Information Technology	
COs	Course Outcome: On completion of this course, the students will gain knowledge and will be able to
CO1	know the principle, construction and working of lasers and their applications in fibre optic communication.
CO2	understand the magnetic properties of materials and their specific applications in computer data storage.
CO3	analyze the classical and quantum electron theories and energy band structures.
CO4	evaluate the conducting properties of semiconductors and its applications in various devices.
CO5	comprehend the knowledge on quantum confinement effects.
CO6	apply optical, magnetic and conducting properties of materials, quantum concepts at the nanoscale in various applications

20CH101-Engineering Chemistry	
COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Illustrate the role of chemistry in everyday life and the industrial uses of water.
CO2	Construct electrochemical cells and to determine the cell potential.
CO3	Compare and analyse the different energy storage devices and to explain potential energy sources.
CO4	Classify different types of polymeric materials and to discuss their properties and applications.
CO5	Explain basic concepts of nanochemistry and to enumerate the applications of nanomaterials in engineering and technology.

20GE101 - Problem solving and C Programming	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Develop algorithmic solutions to simple computational problems
CO2	Develop simple applications using basic constructs
CO3	Write programs using arrays and strings
CO4	Design and implement applications using functions, pointers and structures.
CO5	Design applications using sequential and random-access file processing.

20EE102 - Basic Electrical, Electronics & Measurements Engineering	
COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Analyze the essentials of electric circuits
CO2	Study the different types of renewable sources and common domestic loads
CO3	Classify the different types of electric machines and transformers
CO4	Acquire the knowledge in basics of electronic circuits
CO5	Describe the different types of measuring instruments and transducers

Laboratory

20PC111-Physics & Chemistry Lab	
COs	Course Outcome: Upon completion of the course, based on hands-on experience of the students, they will be able to
CO1	Determine the wavelength of mercury spectrum and also determine the wavelength of a laser source, particle size, divergence angle of semiconductor laser source using diffraction grating and to analyze the numerical aperture and acceptance angle of an optical fibre.
CO2	Examine the Young's modulus of a beam by uniform and non-uniform bending and to estimate the moment of inertia of the disc and rigidity modulus of wire by torsional pendulum.
CO3	Determine the band gap of a semiconductor.
CO4	Analyse the given hard water sample, change in conductivity of an acid(s) when added with base.
CO5	Examine the change in pH when an acid is added with a base, Understand the redox reactions and its impact on emf values.
CO6	Assess the corrosion rate of a given metal, construct an electrochemical cell to determine the concentration of the given solution.

20GE111 - C Programming Lab	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Write programs for simple applications making use of basic constructs, arrays and strings.
CO2	Develop programs involving functions, recursion, pointers, and structures.
CO3	Create applications using sequential and random access file processing.

20EL111-Interpersonal Skills - Listening and Speaking Lab	
COs	Course Outcome: At the end of the course learners will be able to
CO1	Listen and respond appropriately.
CO2	Participate in group discussions.
CO3	Make effective presentations.
CO4	Participate confidently and appropriately in conversations both formal and informal.
CO5	Utilize mass media and technology effectively.
CO6	Interpret contextual knowledge clearly.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Odd semester - 2020 -21

B.Tech. - Artificial Intelligence & Data Science – 1st semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	1	Theory	20EL101 - Communicative English & Life Skills
2.	1	Theory	20MA101 - Engineering Mathematics – I
3.	1	Theory	20PH101 - Physics for Computer Science and Information Technology
4.	1	Theory	20CH101 - Engineering Chemistry
5.	1	Theory	20GE101 - Problem solving and C Programming
6.	1	Theory	20EE102 - Basic Electrical, Electronics & Measurements Engineering
7.	1	Practical	20PC111 - Physics & Chemistry Laboratory
8.	1	Practical	20GE111 - C Programming Lab
9	1	Practical	20EL111 - Interpersonal Skills - Listening and Speaking Lab

First Semester - B.Tech. / AI & DS

20EL101 - Communicative English & Life Skills	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read articles of a general kind in magazines and newspapers efficiently and identify different life skills.
CO2	Participate efficiently in informal conversations and develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.
CO3	Comprehend conversations and short talks delivered in English.
CO4	Write short essays of a general kind and personal letters and emails in English.
CO5	Develop vocabulary of a general kind by enriching their reading skills.
CO6	Use appropriate thinking and problem- solving techniques to solve new problems.

20MA101-Engineering Mathematics - I	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Diagonalize a matrix by orthogonal transformation.
CO2	Determine the Evolute and Envelope of curves.
CO3	Examine the maxima and minima of function of several variables.
CO4	Apply Gamma and Beta integrals to evaluate improper integrals.
CO5	Evaluate the area and volume by using multiple integrals.

20PH101-Physics for Computer Science and Information Technology	
COs	Course Outcome: On completion of this course, the students will gain knowledge and will be able to
CO1	know the principle, construction and working of lasers and their applications in fibre optic communication.
CO2	understand the magnetic properties of materials and their specific applications in computer data storage.
CO3	analyze the classical and quantum electron theories and energy band structures.
CO4	evaluate the conducting properties of semiconductors and its applications in various devices.
CO5	comprehend the knowledge on quantum confinement effects.
CO6	apply optical, magnetic and conducting properties of materials, quantum concepts at the nanoscale in various applications

20CH101-Engineering Chemistry	
COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Illustrate the role of chemistry in everyday life and the industrial uses of water.
CO2	Construct electrochemical cells and to determine the cell potential.
CO3	Compare and analyse the different energy storage devices and to explain potential energy sources.
CO4	Classify different types of polymeric materials and to discuss their properties and applications.
CO5	Explain basic concepts of nanochemistry and to enumerate the applications of nanomaterials in engineering and technology.

20GE101 - Problem solving and C Programming	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Develop algorithmic solutions to simple computational problems
CO2	Develop simple applications using basic constructs
CO3	Write programs using arrays and strings
CO4	Design and implement applications using functions, pointers and structures.
CO5	Design applications using sequential and random-access file processing.

20EE102 - Basic Electrical, Electronics & Measurements Engineering	
COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Analyze the essentials of electric circuits
CO2	Study the different types of renewable sources and common domestic loads
CO3	Classify the different types of electric machines and transformers
CO4	Acquire the knowledge in basics of electronic circuits
CO5	Describe the different types of measuring instruments and transducers

Laboratory

20PC111-Physics & Chemistry Lab	
COs	Course Outcome: Upon completion of the course, based on hands-on experience of the students, they will be able to
CO1	Determine the wavelength of mercury spectrum and also determine the wavelength of a laser source, particle size, divergence angle of semiconductor laser source using diffraction grating and to analyze the numerical aperture and acceptance angle of an optical fibre.
CO2	Examine the Young's modulus of a beam by uniform and non-uniform bending and to estimate the moment of inertia of the disc and rigidity modulus of wire by torsional pendulum.
CO3	Determine the band gap of a semiconductor.
CO4	Analyse the given hard water sample, change in conductivity of an acid(s) when added with base.
CO5	Examine the change in pH when an acid is added with a base, Understand the redox reactions and its impact on emf values.
CO6	Assess the corrosion rate of a given metal, construct an electrochemical cell to determine the concentration of the given solution.

20GE111 - C Programming Lab	
COs	Course Outcome: Upon completion of the course, the students will be able to
CO1	Write programs for simple applications making use of basic constructs, arrays and strings.
CO2	Develop programs involving functions, recursion, pointers, and structures.
CO3	Create applications using sequential and random access file processing.

20EL111-Interpersonal Skills - Listening and Speaking Lab	
COs	Course Outcome: At the end of the course learners will be able to
CO1	Listen and respond appropriately.
CO2	Participate in group discussions.
CO3	Make effective presentations.
CO4	Participate confidently and appropriately in conversations both formal and informal.
CO5	Utilize mass media and technology effectively.
CO6	Interpret contextual knowledge clearly.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Odd semester - 2020 -21

B.Tech. - Computer Science & Business Systems – 1st semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	1	Theory	20MA102 - Discrete Mathematics
2.	1	Theory	20MA103 - Introduction to Statistics, Probability and Calculus
3.	1	Theory	20IT101 - Fundamentals of Computer Science + Lab
4.	1	Theory & Practical	20EE103 - Principles of Electrical Engineering + Lab
5.	1	Theory & Practical	20PH103 - Fundamentals of Physics + Lab
6.	1	Theory & Practical	20EL102 - Business Communication and Value Sciences - I

First Semester - B.Tech. / CSBS

20MA102-Discrete Mathematics	
COs	Course Outcome: The student will be able to
CO1	Check the validity of the argument
CO2	Construct truth tables and optimize logic by maps
CO3	Define various algebraic structures, axioms and properties
CO4	Analyze various proof techniques and application of principles
CO5	Apply graph theory techniques to solve real life problems

20MA103- Introduction to Statistics, Probability and Calculus	
COs	Course Outcome: The student will be able to
CO1	Apply the concepts of basic statistics, find mean, median, mode, standard deviation, mean deviation, quartile deviation and range for a given data.
CO2	Make use of probability concepts in problems of uncertainty.
CO3	Identify and apply the discrete and continuous distributions concepts in real life problems
CO4	Evaluate the area and volume by using multiple integrals

20IT101 - Fundamentals of Computer Science + Lab	
COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Apply problem solving techniques to simple computational problems
CO2	Understand the syntax and constructs of C language
CO3	Develop structured programs using basic constructs in C
CO4	Understand pointers and arrays in C
CO5	Understand Unix system interface
CO6	Apply various programming methods

20EEE103-Principles of Electrical Engineering + Lab

COs	Course Outcome: After successful completion of the course, the student will be able to:
CO1	Summarize the behavior electrical circuits
CO2	Solve the DC circuits using network theorems
CO3	Interpret the concepts of AC circuits
CO4	Discuss the electrostatic and magnetic fields with circuit laws and analyze the performance of transformers
CO5	Explain the various sensors and Demonstrate electric wiring

20PH103- Fundamentals of Physics + Lab

COs	Course Outcome: On completion of this course, the students will be able to:
CO1	Obtain solution of the oscillator using differential equation.
CO2	Analyze the intensity variation of light due to Polarization and interference
CO3	Explain fundamentals of electromagnetism and quantum mechanics and apply it in engineering problems
CO4	Find solution to thermal and electrical problems faced in computer devices.
CO5	Analyze working principle of lasers and to summarize its applications

20EL102 - Business Communication and Value Sciences I

COs	Course Outcome: After completion of the course, the student will be able to
CO1	Recognize the need for life skills and values
CO2	Recognize own strengths and opportunities
CO3	Apply the life skills to different situations
CO4	Understand the basic tenets of communication
CO5	Apply the basic communication practices in different types of communication
CO6	Evaluate the importance of self-awareness, confidence and communication.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2020 -21

B.E., - Civil Engineering – 2nd semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	2	Theory	20EL201 - Technical English
2.	2	Theory	20MA201 - Engineering Mathematics – II
3.	2	Theory	20PH201 - Physics for Civil Engineering
4.	2	Theory	20CH201 - Chemistry for Civil Engineering
5.	2	Theory	20ME205 - Core II - Engineering Mechanics
6.	2	Theory	20CE201 - Core III -Building Materials
7.	2	Practical	20PC111 - Physics and Chemistry Laboratory
8.	2	Practical	20CS212 - Advanced C Programming Laboratory
9.	2	Practical	20EL211 - Advanced Reading and Writing Lab

Second Semester B.E., / CE

20EL201 - Technical English	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read technical texts and write area- specific texts effortlessly.
CO2	Listen and comprehend lectures and talks in their area of specialization successfully.
CO3	Speak appropriately and effectively in varied formal and informal contexts.
CO4	Write reports and winning job applications.

20MA201-Engineering Mathematics - II	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Solve the higher order linear differential equations.
CO2	Determine the gradient of a scalar field, divergence and curl of a vector fields and interpret their physical meaning and evaluate line, surface and volume integrals by vector integration.
CO3	Apply Laplace Transforms method for solving linear ordinary differential equation.
CO4	Construct an analytic function and analyze conformal mapping.
CO5	Evaluate the real integrals using complex integration

20PH201 - Physics for Civil Engineering	
COs	Course Outcome: On completion of this course, the students will be able to gain basic knowledge and good understanding on the following topics.
CO1	To recognize and apply the basic knowledge of waves and oscillations.
CO2	To know the principle, construction and working of lasers and their applications in fibre optic communication
CO3	To comprehend the concepts of elastic properties of materials and properties of matter.
CO4	To apply the knowledge of thermal properties and its applications.
CO5	To classify sound and analyze the factors affecting the acoustics of buildings.
CO6	To understand the basic concepts of waves and oscillations, laser and fiber optics, elastic and thermal properties of materials and acoustics.

20CH201- Chemistry for Civil Engineering

COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Classify the potential impact of impurities in water for industrial and domestic use.
CO2	Apply the basic knowledge on different polymeric materials, their general preparation methods and their applications in the construction industry
CO3	Compare and contrast different corrosion types and to discuss various corrosion control techniques.
CO4	Explain manufacturing of building materials like cement, lime and glass and their properties.
CO5	Describe the properties and uses of engineering materials such as refractories, adhesives and composites

20ME205 - Core II - Engineering Mechanics

COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Illustrate the vectorial and 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 rigid body
CO5	Solve the friction and the effects by the laws of friction
CO6	Apply the effort of force and moment in the various design functions of rigid body

20CE201 - Core III -Building Materials

COs	Course Outcome: Students will be able to
CO1	Apply the knowledge for the selection of different materials used for masonry
CO2	Compare the properties of various binding materials and aggregates.
CO3	Understand the various applications of concrete, timber and steel.
CO4	Identify the various building finishes.
CO5	Understand the importance of thermal insulation in buildings.
CO6	Discover the applications of modern building materials.

Laboratory

20PC111-Physics & Chemistry Laboratory	
COs	Course Outcome: Upon completion of the course, based on hands-on experience of the students, they will be able to
CO1	determine the wavelength of mercury spectrum and also determine the wavelength of a laser source, particle size, divergence angle of semiconductor laser source using diffraction grating and to analyze the numerical aperture and acceptance angle of an optical fibre.
CO2	examine the Young's modulus of a beam by uniform and non-uniform bending and to estimate the moment of inertia of the disc and rigidity modulus of wire by torsional pendulum.
CO3	determine the band gap of a semiconductor.
CO4	Analyse the given hard water sample, change in conductivity of an acid(s) when added with base .
CO5	Examine the change in pH when an acid is added with a base, Understand the redox reactions and its impact on emf values.
CO6	Assess the corrosion rate of a given metal, Construct an electrochemical cell to determine the concentration of the given solution.

20CS212 - Advanced C Programming Laboratory	
COs	Course Outcome: At the end of the course, the students will be able to:
CO1	Apply array and string concepts to solve problems.
CO2	Employ pointers to solve various problems.
CO3	Implement dynamic memory allocation.
CO4	Understand file manipulations.
CO5	Design and develop real-world applications utilizing the concepts of arrays, strings, pointers, dynamic memory allocation and files.

20EL211 Advanced Reading and Writing Lab	
COs	Course Outcome : At the end of the course learners will be able to
CO1	Write different types of essays.
CO2	Write winning job applications.
CO3	Read and evaluate texts critically
CO4	Display critical thinking in various professional contexts.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2020 -21

B.E., - Computer Science Engineering – 2nd semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	2	Theory	20EL201 - Technical English
2.	2	Theory	20MA201 - Engineering Mathematics – II
3.	2	Theory	20CH102 - Environmental Science and Engineering
4.	2	Theory	20ME103 - Computer Aided Engineering Graphics
5.	2	Theory	20CS201 - Data Structures
6.	2	Theory	20CS202 - Python Programming (Lab Integrated)
7.	2	Practical	20EM111 - Engineering Practices Laboratory
8.	2	Practical	20CS211 - Data Structures Laboratory
9.	2	Practical	20EL211 - Advanced Reading and Writing Laboratory

Second Semester B.E., / CSE

20EL201 - Technical English	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read technical texts and write area- specific texts effortlessly.
CO2	Listen and comprehend lectures and talks in their area of specialization successfully.
CO3	Speak appropriately and effectively in varied formal and informal contexts.
CO4	Write reports and winning job applications.

20MA201-Engineering Mathematics - II	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Solve the higher order linear differential equations.
CO2	Determine the gradient of a scalar field, divergence and curl of a vector fields and interpret their physical meaning and evaluate line, surface and volume integrals by vector integration.
CO3	Apply Laplace Transforms method for solving linear ordinary differential equation.
CO4	Construct ananalytic function and analyze conformal mapping.
CO5	Evaluate the real integrals using complex integration

20CH102 - Environmental Science and Engineering	
COs	Course Outcome : Upon completion of the course, the students will be able to:
CO1	Illustrate the importance and conservation of natural resources.
CO2	Assess the impact of various pollutants and suggest appropriate pollution control methods.
CO3	Explain the basic structure of ecosystem and the conservation of biodiversity.
CO4	Analyze the social issues related to environment and recommend suitable solutions.
CO5	Investigate the trends in population explosion and assess its impact.

20ME103 - Computer Aided Engineering Graphics

COs	Course Outcome : At the end of this course, the students will be able to:
CO1	Illustrate the fundamentals and standards of engineering drawing and apply the concepts of orthographic projections using CAD software.
CO2	Interpret and construct various plane curves.
CO3	Develop orthographic projections of points, lines and plane surfaces.
CO4	Make use of concepts in projection to draw projections of solids and interpret the concept in section of solids.
CO5	Interpret and visualize development of surfaces.
CO6	Interpret and visualize isometric projection of simple solids.

20CS201 - Data Structures

COs	Course Outcome: At the end of this course, the students will be able to:
CO1	Implement abstract data types for linear data structures.
CO2	Apply the appropriate linear data structures to solve problems.
CO3	Identify and use appropriate tree data structures in problem solving.
CO4	Choose appropriate Graph representations and solve real-world applications.
CO5	Critically analyze the various sorting and searching algorithms.

20CS202 - Python Programming (Lab Integrated)

COs	Course Outcome: At the end of this course, the 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

20EM111 - Engineering Practices Laboratory	
COs	Course Outcome : On successful completion of this course, the student will be able to
CO1	Develop carpentry components and pipe connections including plumbing works.
CO2	Make use of welding equipments to join the structures
CO3	Analyse the basic machining operations
CO4	Develop the models using sheet metal works
CO5	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundry and fittings
CO6	Fabricate carpentry components and pipe connections including plumbing works.
CO7	Carry out simple wiring as per the layout given
CO8	Measures various electrical parameters like Voltage, Current, Power factor, Energy, Earth resistance etc.
CO9	Calculate ripple factor of a given waveform, use logic gates for simple applications.

20CS211 - Data Structures Laboratory	
COs	Course Outcome: At the end of the course, the students will be able to:
CO1	Write functions to implement linear and non-linear data structure operations.
CO2	Suggest and use appropriate linear / non-linear data structure operations for solving a given problem.
CO3	Implement different operations of search trees.
CO4	Implement appropriate Graph representations and traversals to solve real-world applications.
CO5	Implement and analyze the various searching and sorting algorithms. Write programs for simple applications making use of basic constructs, arrays and strings.

20EL211 - Advanced Reading and Writing Laboratory	
COs	Course Outcome : At the end of the course learners will be able to
CO1	Write different types of essays.
CO2	Write winning job applications.
CO3	Read and evaluate texts critically
CO4	Display critical thinking in various professional contexts.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2020 -21

B.E., - Electrical and Electronics Engineering – 2nd semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1	2	Theory	20EL201 - Technical English
2	2	Theory	20MA201 - Engineering Mathematics – II
3	2	Theory	20PH102 - Physics for Electronics Engineering
4	2	Theory	20CH101 - Engineering Chemistry
5	2	Theory	20EE201 - Core II- Electronic Devices and Circuits
6	2	Theory	20EE202 - Core III- Electric Circuit Analysis
7	2	Practical	20PC111 - Physics and Chemistry Laboratory
8	2	Practical	20CS212 - Advanced C Programming Laboratory
9.	2	Practical	20EM211 - Basic Engineering and Circuits Laboratory

Second Semester B.E., / EEE

20EL201 - Technical English	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read technical texts and write area- specific texts effortlessly.
CO2	Listen and comprehend lectures and talks in their area of specialization successfully.
CO3	Speak appropriately and effectively in varied formal and informal contexts.
CO4	Write reports and winning job applications.

20MA201-Engineering Mathematics - II	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Solve the higher order linear differential equations.
CO2	Determine the gradient of a scalar field, divergence and curl of a vector fields and interpret their physical meaning and evaluate line, surface and volume integrals by vector integration.
CO3	Apply Laplace Transforms method for solving linear ordinary differential equation.
CO4	Construct an analytic function and analyze conformal mapping.
CO5	Evaluate the real integrals using complex integration

20PH102 - Physics for Electronics Engineering	
COs	Course Outcome: On completion of this course, the students will be able to
CO1	estimate the conducting properties of materials based on CFE and QFE theories and understand the formation of energy band structures.
CO2	understand the basic properties of semiconducting materials and apply the concepts to determine Hall coefficient.
CO3	elucidate the principle and working of various opto and nanoelectronic devices and their applications.
CO4	attain basic knowledge on the concepts of lasers and apply in fibre optics communication.
CO5	correlate electric and magnetic field behavior of electro-magnetostatics and electrodynamics.
CO6	understand the concepts of conducting materials, semiconducting materials and apply the same to determine resistivity and bandgap, explicate the principle and working of opto and nanoelectronic devices and analyze Maxwell's equation in different forms (differential and integral) in Electro-Magnetostatics and Electrodynamics.

20CH101 - Engineering Chemistry

COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Illustrate the role of chemistry in everyday life and the industrial uses of water.
CO2	Construct electrochemical cells and to determine the cell potential.
CO3	Compare and analyse the different energy storage devices and to explain potential energy sources.
CO4	Classify different types of polymeric materials and to discuss their properties and applications.
CO5	Explain basic concepts of nanochemistry and to enumerate the applications of nanomaterials in engineering and technology.

20EE201 - Core II- Electronic Devices and Circuits

COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Explain the characteristics and applications of electronic devices such as diode, special diodes, BJTs and MOSFETs
CO2	Explain the characteristics and applications of BJTs and MOSFETs
CO3	Design biasing circuits for the BJT and MOSFET based amplifiers for the given specifications
CO4	Explain the operation of Class A,B,C and D power amplifiers
CO5	Design feedback amplifiers and oscillators for given specifications

20EE202 - Core III- Electric Circuit Analysis

COs	Course Outcome: After the completion of the course, students are able to
CO1	Apply the knowledge of basic circuit law and simplify the network using reduction techniques and analyse the circuit using Kirchhoff's law.
CO2	Understand network theorems to simplify the complex networks
CO3	Design resonant circuits which are used in wireless transmission and communication networks.
CO4	Develop the coupled circuit and tuned circuits for communication networks
CO5	Understand 3-phase ac circuits for designing and analysis of power system networks
CO6	Solve and analyse AC and DC transients using Laplace transform techniques

Laboratory

20PC111-Physics & Chemistry Laboratory	
COs	Course Outcome: Upon completion of the course, based on hands-on experience of the students, they will be able to
CO1	determine the wavelength of mercury spectrum and also determine the wavelength of a laser source, particle size, divergence angle of semiconductor laser source using diffraction grating and to analyze the numerical aperture and acceptance angle of an optical fibre.
CO2	examine the Young's modulus of a beam by uniform and non-uniform bending and to estimate the moment of inertia of the disc and rigidity modulus of wire by torsional pendulum.
CO3	determine the band gap of a semiconductor.
CO4	Analyse the given hard water sample, change in conductivity of an acid(s) when added with base .
CO5	Examine the change in pH when an acid is added with a base, Understand the redox reactions and its impact on emf values.
CO6	Assess the corrosion rate of a given metal, Construct an electrochemical cell to determine the concentration of the given solution.

20CS212 - Advanced C Programming Laboratory	
COs	Course Outcome: At the end of the course, the students will be able to:
CO1	Apply array and string concepts to solve problems.
CO2	Employ pointers to solve various problems.
CO3	Implement dynamic memory allocation.
CO4	Understand file manipulations.
CO5	Design and develop real-world applications utilizing the concepts of arrays, strings, pointers, dynamic memory allocation and files.

20EM211 - Basic Engineering and Circuits Laboratory	
COs	Course Outcome: After the completion of the course, students should be able to
CO1	To gain hands on experience in plumbing, welding and Foundry
CO2	To gain hands on experience in basic house wiring
CO3	To gain Practical knowledge in measurement and analysis of electrical quantities in complicated electric circuits using various methods of analysis
CO4	To learn how to analyze an electrical circuit using simulation software
CO5	To wiring, and electric circuits



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2020 -21

B.E., -Electronics and Communication Engineering – 2nd semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	2	Theory	20EL201 - Technical English
2.	2	Theory	20MA201 - Engineering Mathematics – II
3.	2	Theory	20CH102 - Environmental Science and Engineering
4.	2	Theory	20EC201 - Core I – Fundamentals of Electrical Engineering and Circuits
5.	2	Theory	20EC202 - Core II – Electronic Devices
6.	2	Theory	20CS201 - Core III – Data Structures
7.	2	Practical	20EM111 - Engineering Practices Laboratory
8.	2	Practical	20CS211 - Data Structures Laboratory
9.	2	Practical	20EL211 - Advanced Reading and Writing Laboratory

Second Semester B.E., / ECE

20EL201 - Technical English	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read technical texts and write area- specific texts effortlessly.
CO2	Listen and comprehend lectures and talks in their area of specialization successfully.
CO3	Speak appropriately and effectively in varied formal and informal contexts.
CO4	Write reports and winning job applications.

20MA201-Engineering Mathematics - II	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Solve the higher order linear differential equations.
CO2	Determine the gradient of a scalar field, divergence and curl of a vector fields and interpret their physical meaning and evaluate line, surface and volume integrals by vector integration.
CO3	Apply Laplace Transforms method for solving linear ordinary differential equation.
CO4	Construct ananalytic function and analyze conformal mapping.
CO5	Evaluate the real integrals using complex integration

20CH102 - Environmental Science and Engineering	
COs	Course Outcome : Upon completion of the course, the students will be able to:
CO1	Illustrate the importance and conservation of natural resources.
CO2	Assess the impact of various pollutants and suggest appropriate pollution control methods.
CO3	Explain the basic structure of ecosystem and the conservation of biodiversity.
CO4	Analyze the social issues related to environment and recommend suitable solutions.
CO5	Investigate the trends in population explosion and assess its impact.

20EC201 - Core I – Fundamentals of Electrical Engineering and Circuits

COs	Course Outcome : On successful completion of this course, the student will be able to
CO1	Develop the capacity to analyze electrical circuits using mesh and nodal analysis
CO2	Apply the circuit theorems in real time
CO3	Analyse resonance and coupled circuits
CO4	Analyse the transient response for DC circuits
CO5	Explain the two port networks and parameters
CO6	Design, understand and evaluate the AC and DC circuits

20EC202 - Core II – Electronic Devices

COs	Course Outcome: At the end of this course, the students will be able to:
CO1	Understand the basics of electron devices
CO2	Explain the basics of device physics and working principle of PN Junction diode
CO3	Describe the construction, operation and applications of BJT, JFET and MOSFET
CO4	Understand the device physics of metal-semiconductor junctions and working principle of special semiconductor devices
CO5	Explain the construction and working principle of power semiconductor devices and optoelectronic and display devices

20CS201 - Data Structures

COs	Course Outcome: At the end of this course, the students will be able to:
CO1	Implement abstract data types for linear data structures.
CO2	Apply the appropriate linear data structures to solve problems.
CO3	Identify and use appropriate tree data structures in problem solving.
CO4	Choose appropriate Graph representations and solve real-world applications.
CO5	Critically analyze the various sorting and searching algorithms.

Laboratory

20EM111 - Engineering Practices Laboratory	
COs	Course Outcome : On successful completion of this course, the student will be able to
CO1	Develop carpentry components and pipe connections including plumbing works.
CO2	Make use of welding equipments to join the structures
CO3	Analyse the basic machining operations
CO4	Develop the models using sheet metal works
CO5	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundry and fittings
CO6	Fabricate carpentry components and pipe connections including plumbing works.
CO7	Carry out simple wiring as per the layout given
CO8	Measures various electrical parameters like Voltage, Current, Power factor, Energy, Earth resistance etc.
CO9	Calculate ripple factor of a given waveform, use logic gates for simple applications.

20CS211 - Data Structures Laboratory	
COs	Course Outcome: At the end of the course, the students will be able to:
CO1	Write functions to implement linear and non-linear data structure operations.
CO2	Suggest and use appropriate linear / non-linear data structure operations for solving a given problem.
CO3	Implement different operations of search trees.
CO4	Implement appropriate Graph representations and traversals to solve real-world applications.
CO5	Implement and analyze the various searching and sorting algorithms. Write programs for simple applications making use of basic constructs, arrays and strings.

20EL211 - Advanced Reading and Writing Laboratory	
COs	Course Outcome : At the end of the course learners will be able to
CO1	Write different types of essays.
CO2	Write winning job applications.
CO3	Read and evaluate texts critically
CO4	Display critical thinking in various professional contexts.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2020 -21

B.E., -Electronics and Instrumentation Engineering – 2nd semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	2	Theory	20EL201 - Technical English
2.	2	Theory	20MA201 - Engineering Mathematics – II
3.	2	Theory	20PH102 - Physics for Electronics Engineering
4.	2	Theory	20CH101 - Engineering Chemistry
5.	2	Theory	20EI201 - Core II –Basic Electronics and Instrumentation Engineering
6.	2	Theory	20EE202 - Core III- Electric Circuit Analysis
7.	2	Practical	20PC111 - Physics and Chemistry Laboratory
8.	2	Practical	20CS212 - Advanced C Programming Laboratory
9.	2	Practical	20EM211 - Basic Engineering and Circuits Laboratory

Second Semester B.E., / EIE

20EL201 - Technical English

COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read technical texts and write area- specific texts effortlessly.
CO2	Listen and comprehend lectures and talks in their area of specialization successfully.
CO3	Speak appropriately and effectively in varied formal and informal contexts.
CO4	Write reports and winning job applications.

20MA201-Engineering Mathematics - II

COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Solve the higher order linear differential equations.
CO2	Determine the gradient of a scalar field, divergence and curl of a vector fields and interpret their physical meaning and evaluate line, surface and volume integrals by vector integration.
CO3	Apply Laplace Transforms method for solving linear ordinary differential equation.
CO4	Construct an analytic function and analyze conformal mapping.
CO5	Evaluate the real integrals using complex integration

20PH102 - Physics for Electronics Engineering

COs	Course Outcome: On completion of this course, the students will be able to
CO1	estimate the conducting properties of materials based on CFE and QFE theories and understand the formation of energy band structures.
CO2	understand the basic properties of semiconducting materials and apply the concepts to determine Hall coefficient.
CO3	elucidate the principle and working of various opto and nanoelectronic devices and their applications.
CO4	attain basic knowledge on the concepts of lasers and apply in fibre optics communication.
CO5	correlate electric and magnetic field behavior of electro-magnetostatics and electrodynamics.
CO6	understand the concepts of conducting materials, semiconducting materials and apply the same to determine resistivity and bandgap, explicate the principle and working of opto and nanoelectronic devices and analyze Maxwell's equation in different forms (differential and integral) in Electro-Magnetostatics and Electrodynamics.

20CH101 - Engineering Chemistry	
COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Illustrate the role of chemistry in everyday life and the industrial uses of water.
CO2	Construct electrochemical cells and to determine the cell potential.
CO3	Compare and analyse the different energy storage devices and to explain potential energy sources.
CO4	Classify different types of polymeric materials and to discuss their properties and applications.
CO5	Explain basic concepts of nanochemistry and to enumerate the applications of nanomaterials in engineering and technology.

20EI201 - Core II –Basic Electronics and Instrumentation Engineering	
COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Understand the structure and operation of PN junction devices and power supply design
CO2	Differentiate the various transistors and special electronic devices for real time applications
CO3	Illustrate the basic knowledge in Industrial Instrumentation system
CO4	Verify the static and dynamic characteristics of Measurement system
CO5	Categorize the various types of Measuring Instruments for the Industrial applications

20EE202 - Core III- Electric Circuit Analysis	
COs	Course Outcome: After the completion of the course, students are able to
CO1	Apply the knowledge of basic circuit law and simplify the network using reduction techniques and analyse the circuit using Kirchhoff's law.
CO2	Understand network theorems to simplify the complex networks
CO3	Design resonant circuits which are used in wireless transmission and communication networks.
CO4	Develop the coupled circuit and tuned circuits for communication networks
CO5	Understand 3-phase ac circuits for designing and analysis of power system networks
CO6	Solve and analyse AC and DC transients using Laplace transform techniques

Laboratory

20PC111-Physics & Chemistry Laboratory	
COs	Course Outcome: Upon completion of the course, based on hands-on experience of the students, they will be able to
CO1	determine the wavelength of mercury spectrum and also determine the wavelength of a laser source, particle size, divergence angle of semiconductor laser source using diffraction grating and to analyze the numerical aperture and acceptance angle of an optical fibre.
CO2	examine the Young's modulus of a beam by uniform and non-uniform bending and to estimate the moment of inertia of the disc and rigidity modulus of wire by torsional pendulum.
CO3	determine the band gap of a semiconductor.
CO4	Analyse the given hard water sample, change in conductivity of an acid(s) when added with base .
CO5	Examine the change in pH when an acid is added with a base, Understand the redox reactions and its impact on emf values.
CO6	Assess the corrosion rate of a given metal, Construct an electrochemical cell to determine the concentration of the given solution.

20CS212 - Advanced C Programming Laboratory	
COs	Course Outcome: At the end of the course, the students will be able to:
CO1	Apply array and string concepts to solve problems.
CO2	Employ pointers to solve various problems.
CO3	Implement dynamic memory allocation.
CO4	Understand file manipulations.
CO5	Design and develop real-world applications utilizing the concepts of arrays, strings, pointers, dynamic memory allocation and files.

20EM211 - Basic Engineering and Circuits Laboratory	
COs	Course Outcome: After the completion of the course, students should be able to
CO1	To gain hands on experience in plumbing, welding and Foundry
CO2	To gain hands on experience in basic house wiring
CO3	To gain Practical knowledge in measurement and analysis of electrical quantities in complicated electric circuits using various methods of analysis
CO4	To learn how to analyze an electrical circuit using simulation software
CO5	To wiring, and electric circuits



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2020 -21

B.E., - Mechanical Engineering – 2nd semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	2	Theory	20EL201 - Technical English
2.	2	Theory	20MA201 - Engineering Mathematics – II
3.	2	Theory	20PH202 - Physics for Mechanical Engineering
4.	2	Theory	20CH202 - Chemistry for Mechanical Engineering
5.	2	Theory	20ME205 - Core II - Engineering Mechanics
6.	2	Theory	20ME206 - Core III: Fundamentals of Manufacturing Processes
7.	2	Practical	20PC111 - Physics and Chemistry Laboratory
8.	2	Practical	20CS212 - Advanced C Programming Laboratory
9.	2	Practical	20EL211 - Advanced Reading and Writing Lab

Second Semester B.E., / ME

20EL201 - Technical English	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read technical texts and write area- specific texts effortlessly.
CO2	Listen and comprehend lectures and talks in their area of specialization successfully.
CO3	Speak appropriately and effectively in varied formal and informal contexts.
CO4	Write reports and winning job applications.

20MA201-Engineering Mathematics - II	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Solve the higher order linear differential equations.
CO2	Determine the gradient of a scalar field, divergence and curl of a vector fields and interpret their physical meaning and evaluate line, surface and volume integrals by vector integration.
CO3	Apply Laplace Transforms method for solving linear ordinary differential equation.
CO4	Construct ananalytic function and analyze conformal mapping.
CO5	Evaluate the real integrals using complex integration

20PH202 - Physics for Mechanical Engineering	
COs	Course Outcome: On completion of this course, the students will be able to
CO1	know the principle, construction and working of lasers and their applications in fibre optic communication.
CO2	comprehend the concepts of thermal properties of materials and properties of matter.
CO3	recognize and apply basic knowledge of crystals, their structures and defects.
CO4	analyze the properties of magnetic and superconducting materials.
CO5	understand and apply the basics of nanomaterials and carbon nanotubes.
CO6	understand the basics of properties of various materials and apply knowledge for various applications there by helps in finding the solution for specific needs by design.

20CH202- Chemistry for Mechanical Engineering

COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Describe the potential impact of hardness in boiler feed water and methods of softening.
CO2	Explain the basic concepts of thermodynamics.
CO3	Discuss various types of fuels and their combustion processes
CO4	Comprehend the properties and uses of engineering materials such as lubricants, refractories and composites.
CO5	Construct and to analyse phase equilibrium diagram of one and two component systems.

20ME205 - Core II - Engineering Mechanics

COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Illustrate the vectorial and 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 rigid body
CO5	Solve the friction and the effects by the laws of friction
CO6	Apply the effort of force and moment in the various design functions of rigid body

20ME206-Core III - Fundamentals of Manufacturing Processes

COs	Course Outcome: On successful completion of this course, the students will be able to
CO1	Explain different metal casting processes, associated defects, merits and demerits
CO2	Compare the different metal joining processes
CO3	Summarize various hot working and cold working methods of metals
CO4	Demonstrate the various sheet metal making processes
CO5	Distinguish various methods of manufacturing plastic components and interpret the principles of Additive manufacturing
CO6	Suggest the suitable chip-less forming processes for an identified product.

Laboratory

20PC111-Physics & Chemistry Laboratory	
COs	Course Outcome: Upon completion of the course, based on hands-on experience of the students, they will be able to
CO1	determine the wavelength of mercury spectrum and also determine the wavelength of a laser source, particle size, divergence angle of semiconductor laser source using diffraction grating and to analyze the numerical aperture and acceptance angle of an optical fibre.
CO2	examine the Young's modulus of a beam by uniform and non-uniform bending and to estimate the moment of inertia of the disc and rigidity modulus of wire by torsional pendulum.
CO3	determine the band gap of a semiconductor.
CO4	Analyse the given hard water sample, change in conductivity of an acid(s) when added with base .
CO5	Examine the change in pH when an acid is added with a base, Understand the redox reactions and its impact on emf values.
CO6	Assess the corrosion rate of a given metal, Construct an electrochemical cell to determine the concentration of the given solution.

20CS212 - Advanced C Programming Laboratory	
COs	Course Outcome: At the end of the course, the students will be able to:
CO1	Apply array and string concepts to solve problems.
CO2	Employ pointers to solve various problems.
CO3	Implement dynamic memory allocation.
CO4	Understand file manipulations.
CO5	Design and develop real-world applications utilizing the concepts of arrays, strings, pointers, dynamic memory allocation and files.

20EL211 Advanced Reading and Writing Lab	
COs	Course Outcome : At the end of the course learners will be able to
CO1	Write different types of essays.
CO2	Write winning job applications.
CO3	Read and evaluate texts critically
CO4	Display critical thinking in various professional contexts.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2020 -21

B.Tech. - Information Technology – 2nd semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	2	Theory	20EL201 - Technical English
2.	2	Theory	20MA201 - Engineering Mathematics – II
3.	2	Theory	20CH102 - Environmental Science and Engineering
4.	2	Theory	20ME103 - Computer Aided Engineering Graphics
5.	2	Theory	20CS201 - Data Structures
6.	2	Theory	20CS202 - Python Programming (Lab Integrated)
7.	2	Practical	20EM111 - Engineering Practices Laboratory
8.	2	Practical	20CS211 - Data Structures Laboratory
9.	2	Practical	20EL211 - Advanced Reading and Writing Laboratory

Second Semester B.Tech. / IT

20EL201 - Technical English	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read technical texts and write area- specific texts effortlessly.
CO2	Listen and comprehend lectures and talks in their area of specialization successfully.
CO3	Speak appropriately and effectively in varied formal and informal contexts.
CO4	Write reports and winning job applications.

20MA201-Engineering Mathematics - II	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Solve the higher order linear differential equations.
CO2	Determine the gradient of a scalar field, divergence and curl of a vector fields and interpret their physical meaning and evaluate line, surface and volume integrals by vector integration.
CO3	Apply Laplace Transforms method for solving linear ordinary differential equation.
CO4	Construct ananalytic function and analyze conformal mapping.
CO5	Evaluate the real integrals using complex integration

20CH102 - Environmental Science and Engineering	
COs	Course Outcome : Upon completion of the course, the students will be able to:
CO1	Illustrate the importance and conservation of natural resources.
CO2	Assess the impact of various pollutants and suggest appropriate pollution control methods.
CO3	Explain the basic structure of ecosystem and the conservation of biodiversity.
CO4	Analyze the social issues related to environment and recommend suitable solutions.
CO5	Investigate the trends in population explosion and assess its impact.

20ME103 - Computer Aided Engineering Graphics

COs	Course Outcome: At the end of this course, the students will be able to:
CO1	Illustrate the fundamentals and standards of engineering drawing and apply the concepts of orthographic projections using CAD software.
CO2	Interpret and construct various plane curves.
CO3	Develop orthographic projections of points, lines and plane surfaces.
CO4	Make use of concepts in projection to draw projections of solids and interpret the concept in section of solids.
CO5	Interpret and visualize development of surfaces.
CO6	Interpret and visualize isometric projection of simple solids.

20CS201 - Data Structures

COs	Course Outcome: At the end of this course, the students will be able to:
CO1	Implement abstract data types for linear data structures.
CO2	Apply the appropriate linear data structures to solve problems.
CO3	Identify and use appropriate tree data structures in problem solving.
CO4	Choose appropriate Graph representations and solve real-world applications.
CO5	Critically analyze the various sorting and searching algorithms.

20CS202 - Python Programming (Lab Integrated)

COs	Course Outcome: At the end of this course, the 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

20EM111 - Engineering Practices Laboratory	
COs	Course Outcome : On successful completion of this course, the student will be able to
CO1	Develop carpentry components and pipe connections including plumbing works.
CO2	Make use of welding equipments to join the structures
CO3	Analyse the basic machining operations
CO4	Develop the models using sheet metal works
CO5	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundry and fittings
CO6	Fabricate carpentry components and pipe connections including plumbing works.
CO7	Carry out simple wiring as per the layout given
CO8	Measures various electrical parameters like Voltage, Current, Power factor, Energy, Earth resistance etc.
CO9	Calculate ripple factor of a given waveform, use logic gates for simple applications.

20CS211 - Data Structures Laboratory	
COs	Course Outcome: At the end of the course, the students will be able to:
CO1	Write functions to implement linear and non-linear data structure operations.
CO2	Suggest and use appropriate linear / non-linear data structure operations for solving a given problem.
CO3	Implement different operations of search trees.
CO4	Implement appropriate Graph representations and traversals to solve real-world applications.
CO5	Implement and analyze the various searching and sorting algorithms. Write programs for simple applications making use of basic constructs, arrays and strings.

20EL211 - Advanced Reading and Writing Laboratory	
COs	Course Outcome : At the end of the course learners will be able to
CO1	Write different types of essays.
CO2	Write winning job applications.
CO3	Read and evaluate texts critically
CO4	Display critical thinking in various professional contexts.



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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even semester - 2020 -21

B.Tech. - Artificial Intelligence & Data Science – 2nd semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	2	Theory	20EL201 - Technical English
2.	2	Theory	20MA201 - Engineering Mathematics – II
3.	2	Theory	20CH102 - Environmental Science and Engineering
4.	2	Theory	20ME103 - Computer Aided Engineering Graphics
5.	2	Theory	20CS201 - Data Structures
6.	2	Theory	20CS202 - Python Programming (Lab Integrated)
7.	2	Practical	20EM111 - Engineering Practices Laboratory
8.	2	Practical	20CS211 - Data Structures Laboratory
9.	2	Practical	20EL211 - Advanced Reading and Writing Laboratory

Second Semester B.Tech. / AI & DS

20EL201 - Technical English	
COs	Course Outcome: At the end of the course learners will be able to:
CO1	Read technical texts and write area- specific texts effortlessly.
CO2	Listen and comprehend lectures and talks in their area of specialization successfully.
CO3	Speak appropriately and effectively in varied formal and informal contexts.
CO4	Write reports and winning job applications.

20MA201-Engineering Mathematics - II	
COs	Course Outcome: After the successful completion of the course, the student will be able to
CO1	Solve the higher order linear differential equations.
CO2	Determine the gradient of a scalar field, divergence and curl of a vector fields and interpret their physical meaning and evaluate line, surface and volume integrals by vector integration.
CO3	Apply Laplace Transforms method for solving linear ordinary differential equation.
CO4	Construct an analytic function and analyze conformal mapping.
CO5	Evaluate the real integrals using complex integration

20CH102 - Environmental Science and Engineering	
COs	Course Outcome : Upon completion of the course, the students will be able to:
CO1	Illustrate the importance and conservation of natural resources.
CO2	Assess the impact of various pollutants and suggest appropriate pollution control methods.
CO3	Explain the basic structure of ecosystem and the conservation of biodiversity.
CO4	Analyze the social issues related to environment and recommend suitable solutions.
CO5	Investigate the trends in population explosion and assess its impact.

20ME103 - Computer Aided Engineering Graphics

COs	Course Outcome : At the end of this course, the students will be able to:
CO1	Illustrate the fundamentals and standards of engineering drawing and apply the concepts of orthographic projections using CAD software.
CO2	Interpret and construct various plane curves.
CO3	Develop orthographic projections of points, lines and plane surfaces.
CO4	Make use of concepts in projection to draw projections of solids and interpret the concept in section of solids.
CO5	Interpret and visualize development of surfaces.
CO6	Interpret and visualize isometric projection of simple solids.

20CS201 - Data Structures

COs	Course Outcome: At the end of this course, the students will be able to:
CO1	Implement abstract data types for linear data structures.
CO2	Apply the appropriate linear data structures to solve problems.
CO3	Identify and use appropriate tree data structures in problem solving.
CO4	Choose appropriate Graph representations and solve real-world applications.
CO5	Critically analyze the various sorting and searching algorithms.

20CS202 - Python Programming (Lab Integrated)

COs	Course Outcome: At the end of this course, the 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

20EM111 - Engineering Practices Laboratory	
COs	Course Outcome : On successful completion of this course, the student will be able to
CO1	Develop carpentry components and pipe connections including plumbing works.
CO2	Make use of welding equipments to join the structures
CO3	Analyse the basic machining operations
CO4	Develop the models using sheet metal works
CO5	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundry and fittings
CO6	Fabricate carpentry components and pipe connections including plumbing works.
CO7	Carry out simple wiring as per the layout given
CO8	Measures various electrical parameters like Voltage, Current, Power factor, Energy, Earth resistance etc.
CO9	Calculate ripple factor of a given waveform, use logic gates for simple applications.

20CS211 - Data Structures Laboratory	
COs	Course Outcome: At the end of the course, the students will be able to:
CO1	Write functions to implement linear and non-linear data structure operations.
CO2	Suggest and use appropriate linear / non-linear data structure operations for solving a given problem.
CO3	Implement different operations of search trees.
CO4	Implement appropriate Graph representations and traversals to solve real-world applications.
CO5	Implement and analyze the various searching and sorting algorithms. Write programs for simple applications making use of basic constructs, arrays and strings.

20EL211 - Advanced Reading and Writing Laboratory	
COs	Course Outcome : At the end of the course learners will be able to
CO1	Write different types of essays.
CO2	Write winning job applications.
CO3	Read and evaluate texts critically
CO4	Display critical thinking in various professional contexts.



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



R.S.M Nagar, Kavaraipettai, Gummidipoondi Taluk, Thiruvallur Dt- 601206.

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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 - 2020 -21

B.Tech. - Computer Science & Business Systems – 2nd semester

S. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	2	Theory	20MA202 - Linear Algebra
2.	2	Theory	20MA203 - Statistical Methods + Lab
3.	2	Theory	20IT201 - Data Structures and Algorithms + Lab
4.	2	Theory	20EC241 - Principles of Electronics Engineering + Lab
5.	2	Theory	20IT202 - Fundamentals of Economics
6.	2	Theory	20EL202 - Business Communication and Value Sciences - II

Second Semester - B.Tech. / CSBS

20MA202 - Linear Algebra	
COs	Course Outcome: The student will be able to
CO1	Solve the system of linear equations using crammers rule
CO2	Solve the system of equations using LU Decomposition method
CO3	Compute QR decomposition for a given matrix
CO4	Represent the linear transformation in matrix and to find eigen values and eigen vectors
CO5	Apply the concept of linear combinations in image processing and machine learning

20MA203 - Statistical Methods + Lab	
COs	Course Outcome: 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 hypothesis in real life problems.
CO5	Analyse ARIMA model and apply in real life situations.

20IT201 - Data Structures and Algorithms + Lab	
COs	Course Outcome: 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 different non-linear data structures to problem solutions.
CO4	Critically analyse the various sorting algorithms.
CO5	Exemplify the concept of files and its operations.
CO6	Understand files accessing mechanisms.

20EC241 - Principles of Electronics Engineering + Lab	
COs	Course Outcome: On completion of this course, the students will be able to
CO1	Explain the characteristics of diode
CO2	Describe the equivalence circuits of transistors
CO3	Acquire the knowledge on feedback amplifiers and operational amplifiers.
CO4	Describe the simple digital logic circuits

20IT202 - Fundamentals of Economics	
COs	Course Outcome: On completion of the course, students will be able to:
CO1	Become familiar with both principles of micro and macroeconomics.
CO2	Understand about approaches to consumer behaviour and relation between production and cost function.
CO3	Describe and discuss on interaction of product and factor market.
CO4	Get awareness about importance and development of Indian economy and economic reforms.
CO5	Have thorough knowledge in the areas of inflation, unemployment, monetary policy, fiscal policy and international trade.

20EL202 - Business Communication and Value Sciences - II	
COs	Course Outcome: Upon completion of the course, the students will be able to:
CO1	Understand and use tools of structured written communication
CO2	Use electronic/social media to share concepts and ideas
CO3	Understand the basics of presentation and apply effective techniques to make presentations
CO4	Apply the basic concept of speed reading, skimming and scanning.
CO5	Identify individual personality types and role in a team
CO6	Understand the basic concepts of Morality and Diversity and argue on a topic based on morality and diversity
CO7	Articulate opinions on a topic with the objective of influencing others.