R.M.K. ENGINEERING COLLEGE

RSM NAGAR, KAVARAIPETTAI – 601 206

DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – ODD Semester 2019-20

Sl. No.	Semester	Theory/Practical	Course Code / Course Name
1.	1	Theory	HS8151 – Communicative English
2.	1	Theory	MA8151 – Engineering Mathematics – I
3.	1	Theory	PH8151 – Engineering Physics
4.	1	Theory	CY8151 – Engineering Chemistry
5.	1	Theory	GE8151– Problem Solving and Python Programming
6.	1	Theory	GE8152 - Engineering Graphics
7.	1	Practical	GE8161 - Problem Solving and Python Programming Laboratory
8.	1	Practical	BS8161 - Physics and Chemistry Laboratory

First Semester B.E./B.Tech.

HS8151 – Communicative English	
COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO1	Read articles of a general kind in magazines and newspapers efficiently.
CO2	Participate effectively in informal conversations and express their view points in English.
CO3	Comprehend conversations and short talks delivered in English.
CO4	Write short essays of a general kind, personal letters and e-mails effectively.
CO5	Enhance speaking skills and speak fluently in real contexts.
CO6	Develop vocabulary of a general kind by enriching their reading skills.

MA8151 – Engineering Mathematics – I	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	The limit definition and rules of differentiation to differentiate functions and apply differentiation to solve maxima and minima problems.
CO2	Series representation of the function. Apply partial differentiation to solve maxima and minima problems.
CO3	Evaluate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus. Evaluate integrals using techniques of integration, such as substitution, partial fractions and integration by parts. Determine convergence/divergence of improper integrals.
CO4	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables.
CO5	Apply various techniques in solving differential equations.
CO6	After successfully completing the course, the student will have a good understanding of the above topics and solve the related engineering problems.

PH8151 – Engineering Physics	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Understand the basics of properties of matter to gain knowledge on its applications
CO2	Acquire knowledge on the concepts of waves and optical devices and their applications in fibre optics
CO3	Outlines the advanced physics concepts of quantum theory and its applications in tunneling microscopes
CO4	Outlines the advanced physics concepts of quantum theory and its applications in tunneling microscopes
CO5	Understand the basics of crystals, their structures and different crystal growth techniques
CO6	Understand the basics of properties of various materials and apply knowledge for various applications

CY8151 – Engineering Chemistry	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Explaining about the water quality parameters, water analysis and softening of water from industrial perspective.
CO2	Applying the basic concepts of adsorption for pollution abatement
CO3	Relating the significance of phase rule with alloys
CO4	Classifying various types of fuels, their efficiency based on combustion process and analysis of flue gas
CO5	Outline on renewable energy sources and energy storing devices
CO6	Relating the concepts of science with engineering process

GE8151– Problem Solving and Python Programming	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Develop algorithmic solutions to simple computational problems
CO2	Read, write, execute by hand simple Python programs.
CO3	Structure simple Python programs for solving problems.
CO4	Decompose a Python program into functions.
CO5	Represent compound data using Python lists, tuples, dictionaries.
CO6	Read and write data from/to files in Python Programs.

GE8152 - Engineering Graphics

COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO1	Apply the concept to project orthographic projections of points, lines and plane surfaces.
CO2	Construct Projection of solids when the axis is inclined to one reference plane by change of position method.
CO3	Interpret the concept of Section of solids and Development of surfaces.
CO4	Imagine and to project isometric and perspective views.
CO5	Make use of the procedure to draw the various types of curves
CO6	Construct freehand sketching of basic geometrical constructions and multiple views of Objects.

Laboratory

GE8161 - Problem solving and Python Programming Laboratory	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO 1	Write, test, and debug simple Python programs.
CO 2	Implement Python programs with conditionals and loops.
CO 3	Develop Python programs step-wise by defining functions and calling them
CO 4	Use Python lists, tuples, dictionaries for representing compound data.
CO 5	Read and write data from/to files in Python.

BS8161 - Physics and Chemistry Laboratory	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO 1	To understand the basic concepts like torque and torsion oscillation for engineering applications. Applying that to determine (i) moment of inertia of the disc (ii) rigidity modulus of the wire. To understand the basic concepts like elasticity and bending moment of beams for engineering applications. Applying that to determine (i) Young's modulus of the material of the given beam by non-uniform bending.
CO 2	To understand the basic concept of Thermal properties of material for engineering applications. Applying that to determine the thermal conductivity of the bad conductor by Lee's disc method.
CO 3	To understand the basic concept of optics for engineering applications. Applying that (i) to determine the wavelength of mercury spectrum – spectrometer grating (ii) to determine the thickness of a thin wire – Air wedge method (iii) To determine the wavelength, and particle size using Laser and also to determine the acceptance angle in an optical fiber.
CO 4	Estimate the water quality parameters
CO 5	Identify the unknown concentration using pH
CO 6	Estimate the concentration using conductance

R.M.K. ENGINEERING COLLEGE
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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even Semester 2019-20

CIVIL ENGINEERING – 2nd SEMESTER

Sl. No.	Semester	Theory/Practical	Course Code / Course Name
1.	2	Theory	HS8251 – Technical English
2.	2	Theory	MA8251 – Engineering Mathematics – II
3.	2	Theory	PH8201– Physics For Civil Engineering
4.	2	Theory	BE8251 – Basic Electrical and Electronics Engineering
5.	2	Theory	GE8291– Environmental Science and Engineering
6.	2	Theory	GE8292 – Engineering Mechanics
7.	2	Practical	GE8261- Engineering Practices Laboratory
8.	2	Practical	CE8211 - Computer Aided Building Drawing

Second Semester B.E/CIVIL

HS8251 – Technical English	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Write area-specific texts effectively.
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 job applications appropriately.
CO5	Improve presentation skills.
CO6	Enhance grammatical accuracy.

MA8251 – Engineering Mathematics – II	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
CO2	Gradient, divergence and curl of a vector point function and related identities. □Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
CO3	Analytic functions- Conformal mapping – Mapping by functions - Bilinear transformation.
CO4	Complex integration - Taylor's and Laurent's series, Use of circular contour and semicircular contour.
CO5	Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.
CO6	After successfully completing the course, the student will have a good understanding of the above topics and solve the related engineering problems.

PH8201– Physics For Civil Engineering	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Understand the basic concepts of thermal performance of buildings
CO2	Acquire knowledge on the acoustics properties of buildings
CO3	Get knowledge on magnetic and dielectric properties of materials.
CO4	Understand the functioning of optical materials for optoelectronics
CO5	Understand the basics of quantum structures and their applications in spintronics and carbon electronics.
CO6	Understand the electrical, magnetic, dielectric, optical properties of materials and properties of Nano electronic devices.

BE8251 – Basic Electrical and Electronics Engineering	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Illustrate the operation of AC & DC Circuits.
CO2	Explain the operation of Electrical measuring Instruments.
CO3	Explain the operation of Electrical Machines
CO4	Ability to identify Semiconductor Devices.
CO5	Apply the Digital Electronics for domestic Application
CO6	Explain the operation of communication System

GE8291– Environmental Science and Engineering	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Explaining the concepts of different ecosystem and biodiversity present.
CO2	Applying the basic concepts of science and engineering for pollution abatement
CO3	Explaining the different types of natural resources, usage and exploitation
CO4	Implementing scientific, technological, and economic solutions to environmental problems
CO5	Outline on the impact of population on environment
CO6	Relating the concepts of science and environment with engineering process

GE8292 – Engineering Mechanics	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Illustrate the vectorial and scalar representation of forces and moments
CO2	Analyse the rigid body in equilibrium
CO3	Evaluate the properties of surfaces and solids
CO4	Calculate dynamic forces exerted in rigid body
CO5	Determine the friction and the effects by the laws of friction
CO6	Relating the concepts of mechanics with engineering process

Laboratory

	GE8261- Engineering Practices Laboratory
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO 1	To Fabricate Carpentry Components and pipe connections including plumbing works.
CO 2	To make Use of welding Equipments to join the structures.
CO 3	To Carry out the basic machining operations.
CO 4	To Make the models using sheet metal works.
CO 5	To lustrate on centrifugal pump, air conditioner, operations of smithy, foundry and fitting tools.
CO 6	To carry out basic home electrical works and appliances.

	CE8211 - Computer Aided Building Drawing
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO 1	Develop plan and orientation and joinery details of paneled and glazed Doors in AUTOCAD.
CO 2	Draft the plan elevation and sectional details of load bearing structures in AUTOCAD
CO 3	Plot the plan elevation and sectional details of buildings with sloping roof in AUTOCAD
CO 4	Draft the plan elevation and sectional details of buildings with load bearing walls in AUTOCAD
CO 5	Draw the plan elevation and sectional details of industrial buildings with north light roofing in AUTOCAD
CO 6	Develop the building information modeling

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even Semester 2019-20

COMPUTER SCIENCE ENGINEERING – 2ⁿᵈ SEMESTER

Sl. No.	Semester	Theory/Practical	Course Code / Course Name
1.	2	Theory	HS8251 – Technical English
2.	2	Theory	MA8251 – Engineering Mathematics – II
3.	2	Theory	PH8252 - Physics for Information Science
4.	2	Theory	BE8255 – Basic Electrical, Electronics and Measurement Engineering
5.	2	Theory	GE8291– Environmental Science and Engineering
6.	2	Theory	CS8251 – Programming in C
7.	2	Practical	GE8261- Engineering Practices Laboratory
8.	2	Practical	CS8261 - C Programming Laboratory

Second Semester B.E./CSE

HS8251 – Technical English	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Write area-specific texts effectively.
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 job applications appropriately.
CO5	Improve presentation skills.
CO6	Enhance grammatical accuracy.

MA8251 – Engineering Mathematics – II	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
CO2	Gradient, divergence and curl of a vector point function and related identities. Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
CO3	Analytic functions- Conformal mapping – Mapping by functions - Bilinear transformation.
CO4	Complex integration - Taylor's and Laurent's series, Use of circular contour and semicircular contour.
CO5	Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.
CO6	After successfully completing the course, the student will have a good understanding of the above topics and solve the related engineering problems.

PH8252 - Physics for Information Science	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Gain knowledge on classical and quantum electron theories, and energy band structures
CO2	Acquire knowledge on basics of semiconductor physics and its applications in various devices,
CO3	Get knowledge on magnetic properties of materials and their applications in data storage,
CO4	Have the necessary understanding on the functioning of optical materials for optoelectronics,
CO5	Understand the basics of quantum structures and their applications in carbon electronics.
CO6	Understand the basics of physics and their applications in electronics.

BE8255 – Basic Electrical, Electronics and Measurement Engineering	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Illustrate the behavior of electric circuits using fundamental laws and techniques.
CO2	Explain the operation of DC, AC and Special machines
CO3	Summarize different energy sources, protective devices and its applications
CO4	Outline the characteristics and applications of semiconductor diodes.
CO5	Summarize the characteristics and errors of an instruments
CO6	Explain the working of different types of Analog Instruments and transducers

GE8291– Environmental Science and Engineering	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Explaining the concepts of different ecosystem and biodiversity present.
CO2	Applying the basic concepts of science and engineering for pollution abatement
CO3	Explaining the different types of natural resources, usage and exploitation
CO4	Implementing scientific, technological, and economic solutions to environmental problems
CO5	Outline on the impact of population on environment
CO6	Relating the concepts of science and environment with engineering process

CS8251 – Programming in C	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Develop algorithmic solutions to simple computational problems
CO2	Read, write, execute by hand simple C programs.
CO3	Structure simple C programs for solving problems.
CO4	Decompose a C program into functions.
CO5	Write Programs using Structures and Pointers In C

Laboratory

GE8261- Engineering Practices Laboratory	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO 1	To Fabricate Carpentry Components and pipe connections including plumbing works.
CO 2	To make Use of welding Equipments to join the structures.
CO 3	To Carry out the basic machining operations.
CO 4	To Make the models using sheet metal works.
CO 5	To lustrate on centrifugal pump, air conditioner, operations of smithy, foundry and fitting tools.
CO 6	To carry out basic home electrical works and appliances.

CS8261 - C Programming Laboratory	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO 1	Develop C programs for simple applications making use of basic constructs
CO 2	Create simple programs using arrays
CO 3	Develop C programs for simple applications making use of basic constructs, arrays and strings.
CO 4	Develop C programs involving functions, recursion, pointers, and structures.
CO 5	Design applications using sequential and random access file processing.
CO 6	Create Banking applications using sequential and random access file processing.

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even Semester 2019-20

ELECTRICAL AND ELECTRONICS ENGINEERING – 2nd SEMESTER

Sl. No.	Semester	Theory/Practical	Course Code / Course Name
1.	2	Theory	HS8251 – Technical English
2.	2	Theory	MA8251 – Engineering Mathematics – II
3.	2	Theory	PH8253– Physics for Electronics Engineering
4.	2	Theory	BE8252 – Basic Civil and Mechanical Engineering
5.	2	Theory	EE8251- Circuit Theory
6.	2	Theory	GE8291– Environmental Science and Engineering
7.	2	Practical	GE8261- Engineering Practices Laboratory
8.	2	Practical	EE8261 - Electric Circuits Laboratory

Second Semester B.E./EEE

HS8251 – Technical English	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Write area-specific texts effectively.
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 job applications appropriately.
CO5	Improve presentation skills.
CO6	Enhance grammatical accuracy.

MA8251 – Engineering Mathematics – II	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
CO2	Gradient, divergence and curl of a vector point function and related identities. Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
CO3	Analytic functions- Conformal mapping – Mapping by functions - Bilinear transformation.
CO4	Complex integration - Taylor's and Laurent's series, Use of circular contour and semicircular contour.
CO5	Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.
CO6	After successfully completing the course, the student will have a good understanding of the above topics and solve the related engineering problems.

PH8253– Physics for Electronics Engineering	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Acquire knowledge on classical and quantum electron theories, and energy band structures
CO2	Acquire knowledge on basics of semiconductor physics and its applications in various devices.
CO3	Get knowledge on magnetic and dielectric properties of materials.
CO4	Understand the functioning of optical materials for optoelectronics
CO5	Understand the basics of quantum structures and their applications in spintronic and carbon electronics.
CO6	Understand the electrical, magnetic, dielectric, optical properties of materials and properties of Nano electronic devices.

\textbf{BE8252 – Basic Civil and Mechanical Engineering}	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Imparting the basic knowledge on civil and mechanical engineering
CO2	Familiarizing the materials and measurements used in civil engineering
CO3	Providing the exposure of the fundamental elements of civil engineering structures
CO4	Enabling the students to distinguish the components and working of power plants
CO5	Imparting the knowledge on Internal combustion engines and its components.
CO6	Introduction to refrigeration and airconditioning systems

\textbf{EE8251- Circuit Theory}	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Introduce electric circuits and its analysis.
CO2	Impart knowledge on solving circuit equations using network theorems.
CO3	Educate on obtaining the transient response of circuits
CO4	Introduce pharos diagrams and analysis of three phase circuits.
CO5	Introduce the phenomenon of resonance in coupled circuits
CO6	Introduce the concept of coupled circuits.

\textbf{GE8291– Environmental Science and Engineering}	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Explaining the concepts of different ecosystem and biodiversity present.
CO2	Applying the basic concepts of science and engineering for pollution abatement
CO3	Explaining the different types of natural resources, usage and exploitation
CO4	Implementing scientific, technological, and economic solutions to environmental problems
CO5	Outline on the impact of population on environment
CO6	Relating the concepts of science and environment with engineering process

Laboratory

GE8261- Engineering Practices Laboratory	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO 1	To Fabricate Carpentry Components and pipe connections including plumbing works.
CO 2	To make Use of welding Equipments to join the structures.
CO 3	To Carry out the basic machining operations.
CO 4	To Make the models using sheet metal works.
CO 5	To lustrate on centrifugal pump, air conditioner, operations of smithy, foundry and fitting tools.
CO 6	To carry out basic home electrical works and appliances.

EE8261 - Electric Circuits Laboratory	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO 1	Understand the basic circuit elements, circuit variables and verification of Kirchhoff laws
CO 2	Understand and apply network theorems.
CO 3	Determine time constant of RC circuits
CO 4	Acquire knowledge on series and parallel resonance circuits
CO 5	Acquire knowledge on three phase balanced, unbalanced star and delta connected networks
CO 6	Simulate and Illustrate various electric circuits

R.M.K. ENGINEERING COLLEGE
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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even Semester 2019-20

ELECTRONICS AND COMMUNICATION ENGINEERING – 2nd SEMESTER

Sl. No.	Semester	Theory/Practical	Course Code / Course Name
1.	2	Theory	HS8251 – Technical English
2.	2	Theory	MA8251 – Engineering Mathematics – II
3.	2	Theory	PH8253– Physics for Electronics Engineering
4.	2	Theory	BE8254 – Basic Electrical and Instrumentation Engineering
5.	2	Theory	EC8251- Circuit Analysis
6.	2	Theory	EC8252 – Electronic Devices
7.	2	Practical	EC8261- Circuits and Devices Laboratory
8.	2	Practical	GE8261- Engineering Practices Laboratory

Second Semester B.E./ECE

HS8251 – Technical English	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Write area-specific texts effectively.
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 job applications appropriately.
CO5	Improve presentation skills.
CO6	Enhance grammatical accuracy.

MA8251 – Engineering Mathematics – II	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
CO2	Gradient, divergence and curl of a vector point function and related identities. Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
CO3	Analytic functions- Conformal mapping – Mapping by functions - Bilinear transformation.
CO4	Complex integration - Taylor's and Laurent's series, Use of circular contour and semicircular contour.
CO5	Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.
CO6	After successfully completing the course, the student will have a good understanding of the above topics and solve the related engineering problems.

PH8253– Physics for Electronics Engineering	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Acquire knowledge on classical and quantum electron theories, and energy band structures
CO2	Acquire knowledge on basics of semiconductor physics and its applications in various devices.
CO3	Get knowledge on magnetic and dielectric properties of materials.
CO4	Understand the functioning of optical materials for optoelectronics
CO5	Understand the basics of quantum structures and their applications in spintronic and carbon electronics.
CO6	Understand the electrical, magnetic, dielectric, optical properties of materials and properties of Nano electronic devices.

BE8254 – Basic Electrical and Instrumentation Engineering

COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO1	Understand the concepts of three phase power circuits and measurement
CO2	Comprehend the concepts in Transformers
CO3	Comprehend the concepts in DC Machines
CO4	Comprehend the concepts in AC Machines
CO5	Choose appropriate measuring instruments for given application

EC8251- Circuit Analysis

COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO1	Solve the electrical circuits using mesh and nodal analysis
CO2	Explain the concept of Graph of a Network.
CO3	Apply the circuit theorems in real time
CO4	Analyze resonance and coupled circuits
CO5	Analyze the transient response for DC Circuits
CO6	Explain the two port networks and parameters

EC8252 – Electronic Devices

COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO1	Explain the theory of PN junction diode.
CO2	Explain the construction and operation of transistor.
CO3	Explain the concepts of voltage controlled devices and infer its characteristics
CO4	Illustrate the concept of special semiconductor devices.
CO5	Explain the operation of power and display devices.
CO6	Make use of electronic devices in applications

Laboratory

COs	EC8261- Circuits and Devices Laboratory
	Course Outcome : The students, after the completion of the course, are expected to ….
CO 1	Analyze the characteristics of basic electronic devices
CO 2	Design Clipper and Clamper & FWR
CO 3	Design RL and RC circuits
CO 4	Verify KVL & KCL
CO 5	Verify Thevinin& Norton theorem
CO 6	Verify Super Position Theorems, maximum power transfer & reciprocity theorem

COs	GE8261- Engineering Practices Laboratory
	Course Outcome : The students, after the completion of the course, are expected to ….
CO 1	To Fabricate Carpentry Components and pipe connections including plumbing works.
CO 2	To make Use of welding Equipments to join the structures.
CO 3	To Carry out the basic machining operations.
CO 4	To Make the models using sheet metal works.
CO 5	To lustrate on centrifugal pump, air conditioner, operations of smithy, foundry and fitting tools.
CO 6	To carry out basic home electrical works and appliances.

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DEPARTMENT OF SCIENCE & HUMANITIES

Course Outcomes – Even Semester 2019-20

ELECTRONICS AND INSTRUMENTATION ENGINEERING – 2nd SEMESTER

Sl. No.	Semester	Theory/Practical	Course Code / Course Name
1.	2	Theory	HS8251 – Technical English
2..	2	Theory	MA8251 – Engineering Mathematics – II
3.	2	Theory	PH8253– Physics for Electronics Engineering
4.	2	Theory	BE8252 – Basic Civil and Mechanical Engineering
5.	2	Theory	EE8251- Circuit Theory
6.	2	Theory	GE8291– Environmental Science and Engineering
7.	2	Practical	GE8261- Engineering Practices Laboratory
8.	2	Practical	EE8261 - Electric Circuits Laboratory

Second Semester B.E./EIE

HS8251 – Technical English	
COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO1	Write area-specific texts effectively.
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 job applications appropriately.
CO5	Improve presentation skills.
CO6	Enhance grammatical accuracy.

	MA8251 – Engineering Mathematics – II
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
CO2	Gradient, divergence and curl of a vector point function and related identities. Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
CO3	Analytic functions- Conformal mapping – Mapping by functions - Bilinear transformation.
CO4	Complex integration - Taylor's and Laurent's series, Use of circular contour and semicircular contour.
CO5	Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.
CO6	After successfully completing the course, the student will have a good understanding of the above topics and solve the related engineering problems.

	PH8253– Physics for Electronics Engineering
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Acquire knowledge on classical and quantum electron theories, and energy band structures
CO2	Acquire knowledge on basics of semiconductor physics and its applications in various devices.
CO3	Get knowledge on magnetic and dielectric properties of materials.
CO4	Understand the functioning of optical materials for optoelectronics
CO5	Understand the basics of quantum structures and their applications in spintronic and carbon electronics.
CO6	Understand the electrical, magnetic, dielectric, optical properties of materials and properties of Nano electronic devices.

BE8252 – Basic Civil and Mechanical Engineering

COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO1	Imparting the basic knowledge on civil and mechanical engineering
CO2	Familiarizing the materials and measurements used in civil engineering
CO3	Providing the exposure of the fundamental elements of civil engineering structures
CO4	Enabling the students to distinguish the components and working of power plants
CO5	Imparting the knowledge on Internal combustion engines and its components.
CO6	Introduction to refrigeration and airconditioning systems

EE8251- Circuit Theory

COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO1	Introduce electric circuits and its analysis.
CO2	Impart knowledge on solving circuit equations using network theorems.
CO3	Educate on obtaining the transient response of circuits
CO4	Introduce pharos diagrams and analysis of three phase circuits.
CO5	Introduce the phenomenon of resonance in coupled circuits
CO6	Introduce the concept of coupled circuits.

GE8291– Environmental Science and Engineering

COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO1	Explaining the concepts of different ecosystem and biodiversity present.
CO2	Applying the basic concepts of science and engineering for pollution abatement
CO3	Explaining the different types of natural resources, usage and exploitation
CO4	Implementing scientific, technological, and economic solutions to environmental problems
CO5	Outline on the impact of population on environment
CO6	Relating the concepts of science and environment with engineering process

Laboratory

GE8261- Engineering Practices Laboratory	
COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO 1	To Fabricate Carpentry Components and pipe connections including plumbing works.
CO 2	To make Use of welding Equipments to join the structures.
CO 3	To Carry out the basic machining operations.
CO 4	To Make the models using sheet metal works.
CO 5	To lustrate on centrifugal pump, air conditioner, operations of smithy, foundry and fitting tools.
CO 6	To carry out basic home electrical works and appliances.

EE8261 - Electric Circuits Laboratory	
COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO 1	Understand the basic circuit elements, circuit variables and verification of Kirchhoff laws
CO 2	Understand and apply network theorems.
CO 3	Determine time constant of RC circuits
CO 4	Acquire knowledge on series and parallel resonance circuits
CO 5	Acquire knowledge on three phase balanced, unbalanced star and delta connected networks
CO 6	Simulate and Illustrate various electric circuits

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Course Outcomes – Even Semester 2019-20

MECHANICAL ENGINEERING – 2nd SEMESTER

Sl. No.	Semester	Theory/Practical	Course Code / Course Name
1.	2	Theory	HS8251 – Technical English
2.	2	Theory	MA8251 – Engineering Mathematics – II
3.	2	Theory	PH8251 - Materials Science
4.	2	Theory	BE8253 – Basic Electrical, Electronics and Instrumentation Engineering
5.	2	Theory	GE8291– Environmental Science and Engineering
6.	2	Theory	GE8292 – Engineering Mechanics
7.	2	Practical	GE8261- Engineering Practices Laboratory
8.	2	Practical	BE8261 - Basic Electrical, Electronics and Instrumentation Engineering Laboratory

Second Semester B.E./MECH

HS8251 – Technical English	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Write area-specific texts effectively.
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 job applications appropriately.
CO5	Improve presentation skills.
CO6	Enhance grammatical accuracy.

MA8251 – Engineering Mathematics – II	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
CO2	Gradient, divergence and curl of a vector point function and related identities. Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
CO3	Analytic functions- Conformal mapping – Mapping by functions - Bilinear transformation.
CO4	Complex integration - Taylor's and Laurent's series, Use of circular contour and semicircular contour.
CO5	Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.
CO6	After successfully completing the course, the student will have a good understanding of the above topics and solve the related engineering problems.

PH8251 - Materials Science	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Have knowledge on the various phase diagrams and their applications
CO2	Acquire knowledge on Fe-Fe3C phase diagram, various microstructures and alloys
CO3	Get knowledge on mechanical properties of materials and their measurement
CO4	Gain knowledge on magnetic, dielectric and superconducting properties of materials
CO5	Understand the basics of ceramics, composites and nonmaterial's.
CO6	Understand the basics of various materials.

BE8253 – Basic Electrical, Electronics and Instrumentation Engineering	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Analyze the DC circuit
CO2	Analyze the AC circuit
CO3	Explain the working principle and performance charecteristics of electrical machines
CO4	Explain the construction & static charecteristics of electronic devices & its application
CO5	Choose the instruments for specific application.

GE8291– Environmental Science and Engineering	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Explaining the concepts of different ecosystem and biodiversity present.
CO2	Applying the basic concepts of science and engineering for pollution abatement
CO3	Explaining the different types of natural resources, usage and exploitation
CO4	Implementing scientific, technological, and economic solutions to environmental problems
CO5	Outline on the impact of population on environment
CO6	Relating the concepts of science and environment with engineering process

GE8292 – Engineering Mechanics	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Illustrate the vectorial and scalar representation of forces and moments
CO2	Analyse the rigid body in equilibrium
CO3	Evaluate the properties of surfaces and solids
CO4	Calculate dynamic forces exerted in rigid body
CO5	Determine the friction and the effects by the laws of friction
CO6	Relating the concepts of mechanics with engineering process

Laboratory

	GE8261- Engineering Practices Laboratory
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO 1	To Fabricate Carpentry Components and pipe connections including plumbing works.
CO 2	To make Use of welding Equipments to join the structures.
CO 3	To Carry out the basic machining operations.
CO 4	To Make the models using sheet metal works.
CO 5	To lustrate on centrifugal pump, air conditioner, operations of smithy, foundry and fitting tools.
CO 6	To carry out basic home electrical works and appliances.

	BE8261 - Basic Electrical, Electronics and Instrumentation Engineering Laboratory
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO 1	Understand the basic circuit elements, circuit variables and verification of Kirchhoff laws and Network theorems
CO 2	Obtain the performance characteristics of Transformers, AC and DC Machines.
CO 3	Determine power, power factor using Two Wattmeter.
CO 4	Acquire knowledge on diode and transistor based applications.
CO 5	Acquire knowledge on measuring devices and components
CO 6	Compare and Measure physical parameters like displacement and pressure based transducers

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Course Outcomes – Even Semester 2019-20

INFORMATION TECHNOLOGY – 2nd SEMESTER

Sl. No.	Semester	Theory/Practical	Course Code / Course Name
1.	2	Theory	HS8251 – Technical English
2.	2	Theory	MA8251 – Engineering Mathematics – II
3.	2	Theory	PH8252 - Physics for Information Science
4.	2	Theory	BE8255 – Basic Electrical, Electronics and Measurement Engineering
5.	2	Theory	IT8201 – Information Technology Essentials
6.	2	Theory	CS8251 – Programming in C
7.	2	Practical	GE8261- Engineering Practices Laboratory
8.	2	Practical	CS8261 - C Programming Laboratory
9.	2	Practical	IT8211- Information Technology Essentials Laboratory

Second Semester B.Tech./ IT

HS8251 – Technical English	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Write area-specific texts effectively.
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 job applications appropriately.
CO5	Improve presentation skills.
CO6	Enhance grammatical accuracy.

MA8251 – Engineering Mathematics – II	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
CO2	Gradient, divergence and curl of a vector point function and related identities. Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
CO3	Analytic functions- Conformal mapping – Mapping by functions - Bilinear transformation.
CO4	Complex integration - Taylor's and Laurent's series, Use of circular contour and semicircular contour.
CO5	Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.
CO6	After successfully completing the course, the student will have a good understanding of the above topics and solve the related engineering problems.

PH8252 - Physics for Information Science	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	Gain knowledge on classical and quantum electron theories, and energy band structures
CO2	Acquire knowledge on basics of semiconductor physics and its applications in various devices,
CO3	Get knowledge on magnetic properties of materials and their applications in data storage,
CO4	Have the necessary understanding on the functioning of optical materials for optoelectronics,
CO5	Understand the basics of quantum structures and their applications in carbon electronics.
CO6	Understand the basics of physics and their applications in electronics.

BE8255 – Basic Electrical, Electronics and Measurement Engineering

COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO1	Illustrate the behavior of electric circuits using fundamental laws and techniques.
CO2	Explain the operation of DC, AC and Special machines
CO3	Summarize different energy sources, protective devices and its applications
CO4	Outline the characteristics and applications of semiconductor diodes.
CO5	Summarize the characteristics and errors of an instruments
CO6	Explain the working of different types of Analog Instruments and transducers

IT8201 – Information Technology Essentials

COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO1	Design and deploy web-sites
CO2	Design and deploy simple web-applications
CO3	Create simple database applications
CO4	Develop information system
CO5	Describe the basics of networking and mobile communications

CS8251 – Programming in C

COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO1	Develop algorithmic solutions to simple computational problems
CO2	Read, write, execute by hand simple C programs.
CO3	Structure simple C programs for solving problems.
CO4	Decompose a C program into functions.
CO5	Write Programs using Structures and Pointers In C

Laboratory

GE8261- Engineering Practices Laboratory

COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO 1	To Fabricate Carpentry Components and pipe connections including plumbing works.
CO 2	To make Use of welding Equipments to join the structures.
CO 3	To Carry out the basic machining operations.
CO 4	To Make the models using sheet metal works.
CO 5	To lustrate on centrifugal pump, air conditioner, operations of smithy, foundry and fitting tools.
CO 6	To carry out basic home electrical works and appliances.

CS8261 - C Programming Laboratory

COs	Course Outcome : The students, after the completion of the course, are expected to ….
CO 1	Develop C programs for simple applications making use of basic constructs
CO 2	Create simple programs using arrays
CO 3	Develop C programs for simple applications making use of basic constructs, arrays and strings.
CO 4	Develop C programs involving functions, recursion, pointers, and structures.
CO 5	Design applications using sequential and random access file processing.
CO 6	Create Banking applications using sequential and random access file processing.

IT8211- Information Technology Essentials Laboratory

CO 1	**Design interactive websites using basic HTML tags, different styles, links and with all basic control elements.**
CO 2	Create client side and server side programs using scripts using PHP.
CO 3	Design dynamic web sites and handle multimedia components
CO 4	Create applications with PHP connected to database
CO 5	Create Personal Information System
CO 6	Implement the technologies behind computer networks and mobile communication