S.No.	Course Type	Course Code	CourseTitle	MaximumMarksAllotted					Total Marks	ContactHours Perweek			Total Credits
				Theory			Practical						
				End Sem.	Mid Sem. Exam.	Quiz/ Assign ment	End Semester	Term work / Lab Work& Sessional		L	T	P	
1	BSC	MA02	Calculus	60	25	15	-	-	100	2	1	-	3
2	BSC	CH01	AppliedChemistry	60	25	15	-	-	100	3	-	-	3
3	ESC	ME02	FundamentalsofMechanical Engineering	60	25	15	-	-	100	2	-	-	2
4	ESC	CE02	EngineeringMechanics	60	25	15	-	-	100	2	-	-	2
5	ESC	EE01	BasicElectricalEngineering	60	25	15	-	-	100	2	-	-	2
6	HSMC	HS02	CommunicativeEnglish	60	25	15	-	-	100	2	-	-	2
7	BSC	CH01(P)	AppliedChemistryLab	-	-	-	60	40	100	-	-	2	1
8	ESC	CE02(P)	EngineeringMechanics Lab	-	-	-	60	40	100	-	-	2	1
9	ESC	EE01(P)	BasicElectricalEngineering Lab	-	-	-	60	40	100	-	-	2	1
10	HSMC	HS02(P)	LanguageLab	-	-	-	60	40	100	-	-	2	1
11	SBC	ME01(P)	Tech.ShopLab	-	-	-	60	40	100	-	-	2	1
			Total	**360**	**150**	**90**	**300**	**200**	**1100**	**13**	**1**	**10**	**19**

BSC-MA02	Calculus	2L:1T:0P	3 Credits

Course Objective: Mathematics is the basic necessity for the foundation of engineering and technology. The main objective of this course is to teach mathematical methods, develop mathematical skills and increase students thinking power.

Module-1 Sequence and Series: Definition of sequence & series, Types of sequences(Bounded, Unbounded, Convergent, Divergent, Oscillatory, MonotonicandCauchy'ssequence), Test for convergence, Comparison test, D'Alembert;s ratio test, Raabe's test, Logarithmic test, Cauchy's root test, Leibnitz test. **(9 Hrs.)**

Module-2 DifferentialCalculus: Review oflimits, Continuityand differentiabilityofunivariate functions, Rolle's theorem, Mean value theorem, Taylor's series and Maclaurin's series, Expansion of function using Taylor's series and Maclaurin's series. **(9 Hrs)**

Module-3 Definite Integral: Fundamental theorem, Properties of definite integral, Integral as limits ofa sums and its application insummationofa series, Beta and Gamma functionand their properties, Duplication formula. **(10 Hrs)**

Module-4 Fourier Series: Introduction of Fourier series, Dirichlet's conditions, Parseval's identity for Fourier series, Fourier series for even and odd functions, Half range Fourier series, Fouriersineandcosineseriesin interval. **(9Hrs)**

Module-5 Vectors: Inner product (Dot product), Vector product (Cross product), Limit of a vector function, Vector differentiation, Velocity and Acceleration, Gradient, Directional Derivative, Divergence, Curl, Line integral. **(8 Hrs)**

Textbooks/References:
1. S.P.Thompson,ATextBookofHigherMathematics:LearningCalculus inasimpleway,2017.
2. I.A.Maron,ProblemsinCalculusofOneVariable,ArihantPublications,2016.
3. G.B.ThomasandR.L.Finney,CalculusandAnalyticgeometry,Pearson,14thEdition, 2018.
4. ErwinKreyszig, AdvancedEngineeringMathematics,JohnWiley&Sons, 10thEdition,2018.
5. T.Veerarajan,EngineeringMathematicsforfirstyear,TataMcGraw-Hill,NewDelhi,2017.

6. B.V.Ramanna,HigherEngineeringMathematics,TataMcGrawHillNewDelhi,2017.
7. R.K.Pandey,VectorCalculus,Oxford,2012.
8. B.S.Grewal,HigherEngineeringMathematics,KhannaPublishers,44[th]Edition, 2020.
9. ShantiNarayan,DifferentialCalculus, S.Chandandcompany,NewDelhi,2013.

IPS Academy
InstituteofEngineering&Science
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AppliedChemistry
(CommonforAll Branches)

CH -01	Applied Chemistry	L -3	3

Course Objective: The objective of this course is to introduce the students with the concepts of Engineering Chemistry and its applications.

Module1:WaterAnalysis &itsTreatment

Sources,Impurities, Hardness & its units, Determination of hardness by EDTA method. Alkalinity & its determination and related numerical. Boiler troubles: - Sludge & scale, Priming & foaming, Boiler corrosion, Caustic embrittlement. Internal treatment methods of softening: - Calgon conditioning, Colloidal conditioning, Carbonate conditioning, Phosphate conditioning. External treatment methods of softening: - Lime-Soda method, Zeolite method and Ion exchange method and related numerical.

Module2: Lubricants

Concept of tribology, Function of lubricants, Classification of lubricants, :- Liquid, solid and semisolid lubricants, Mechanism of lubrication, Properties of lubricating oils:- Viscosity & viscosity- index and numerical, Flash & fire Point, Cloud & Pour Point, Anilline point, Acid number, Saponification number, Steam emulsification number.

Module3:Fuel&Carbonization

Introduction & Classification of fuel, Calorific value :- Gross calorific value and Net calorific value. Determination of calorific value by Bomb Calorimeter. Numerical by Dulong's Formula. Analysis of coal: - Proximate analysis and Ultimate analysis. Introduction of carbonization. Manufacture of metallurgical coke by Otto Hoffman's byproduct oven.

Module4: Polymerization

Introduction&Classificationofpolymers,Mechanismofpolymerization:-Freeradical,Ionic polymerization,Elementaryideaofbiodegradablepolymers.Preparation,propertiesandusesof: -Fiber–Polyamides(Nylons6&66)andPolyethyleneTerephthalate(PET).Rubber/Elastomers – Natural rubber,Cis-trans rubber, Vulcanizationofrubber,Synthetic Rubber:- Buna-S &Buna-N.Plastic:-Thermoplastic&Thermosettingpolymers.Resin:-Phenolicresins,Urea formaldehyde resins.

Module5:Nanotechnology andSpectroscopic Techniques

Introduction of nanotechnology, growth of nano particles by Sol-gel process. Fundamentals of spectroscopy.Principle, Instrumentationand Applications of:-Ultraviolet–Visiblespectroscopy, Infrared spectroscopy & Gas Chromatography.

CourseOutcome: Students willbeable to:

CO1:Understand theprinciplesof hardnessand identifysuitablesoftening methods.

CO2: To acquire knowledge about fundamentals of lubricants and their physiochemical properties.

CO3:Defineandanalyzethecharacteristicsofcoal andcoke.

CO4:Togainthe knowledge ofpolymers, bio-degradablepolymersand engineeringapplications of polymers.

CO5: Demonstrate and apply basic concepts of nanotechnology. To impart knowledge on the essential aspects of standard analytical techniques for Spectroscopy and Chromatography.

SuggestedReading

1. EngineeringChemistry,Satyaprakash&ManishaAgrawal,KhannaBookPublishing.
2. EngineeringChemistry,ShashiChawla,DhanpatRai&Co.(P) Ltd.
3. EssentialsofPhysical Chemistry,Bahl&Tuli, S.ChandPublishing.
4. AppliedChemistry,SunitaRattan,Kataria&Sons.
5. EngineeringChemistry,Baskar,WileyIndiaResearch Gate.
6. EngineeringChemistry–I, D.Grour Krishana, VikasPublishing.
7. EngineeringChemistry,Jain&Jain,DhanpatRai&Co.
8. Chemistryof theElements:N.N. Greenwood and A.Earnshaw, Heinemann (later Elsevier).
9 IntroductiontoNanotechnology:CharlesP.Poole,FrankJ.Owens,WileyIndiaResearchGate.
10. InstrumentalMethodsofChemicalanalysis,WillardDean,Merrittee,TataMacGraw HillLtd.
11. LaboratoryManualEngineeringChemistry,AnupmaRajput,DhanpatRai&Co.
12. PracticalJournalofEngineeringChemistry,Dr.B.K.Mishra,Balajilearning Books.

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MechanicalEngineeringDepartment
B.Tech

ESC-ME02	FundamentalofMechanicalEngineering	2L:0T(2Hrs)	Credits:02

Prerequisite(s): 10+2LevelPhysics, Chemistry

Course Objective: To introduce and learn various aspects of Mechanical Engineering disciplineand its applications to society and to inspire students to take up Mechanical Engineering as a career.

CourseContent:

Module1 **(9hrs)**
Materials: Classification of engineering material, Composition of Cast iron and Carbon steels. Mechanical properties like strength, hardness, toughness, ductility, brittleness, malleability, Hooks law and modulus of elasticity, Stress-strain diagram of ductile and brittle materials, Introduction to UTM.

Module2 **(10hrs)**
Engines: classification of Engine, Introduction to Gas power cycles, Carnot, Otto and Diesel Cycle with P-V and T-S Diagram, and its derivation for efficiency. Terminology used in IC Engine, Indicated, Brake power, Mechanical Efficiency. Working of twostrokes, four strokes Petrol and Diesel engines.

Module3 **(10Hrs)**
Steam Engineering: Classification and working of boilers, mountings and accessories, Performance and efficiency of Boiler, introductiontoboilerdraught. Formationof steam & its properties, T-V, H-S, T-S Diagram, use of steam table with simple numerical Problem.

Module4 **(12hrs)**
FluidsandThermalScience: Fluidproperties. Typesoffluids, Newton'slawofviscosity, Pascal's law, Bernoulli's equation for incompressible fluids, working principle of Hydraulic machines like turbines, Thermodynamic system, properties, state, process, Zeroth, First and Second law of thermodynamics.

Module5 **(9hrs)**
Production Engineering: Elementary theoretical aspects of production processes like casting, carpentry, welding, Black smithy, fitting, Introduction to Lathe and Drilling machines and their various operations, welding classification and working principle.

CourseOutcomes:
Aftercompletionofthecourse, thestudentsareableto:
1. DefinetheEngineeringMaterials, Propertiesandapplicationsandlistthevarioustest on materials by UTM.
2. Understandtheworkingofinternalcombustionenginesandtheirperformance.
3. EvaluateandanalyzeperformancecharacteristicsofBoilers.
4. IdentifytheFluidproperties, itslawsandunderstandthebasicconceptoffirstand secondLaw of Thermodynamics.
5. Experimentwithvariousmanufacturingprocesses; carpentry, blacksmithyandfitting.

TextBook/References:

1. BasicMechanicalEngineering,byC.M.Agrawal,BasantAgrawal,Publisher:Wiley2008.
2. BasicMechanicalEngineeringbySadhuSingh,Publisher:SChand2009.
3. Kothandaraman&Rudramoorthy,FluidMechanics&Machinery,NewAge,2007.
4. Nakra&Choudhary,InstrumentationandMeasurements,TMH,2003
5. NagP.K,EngineeringThermodynamics,TMH,2010.
6. Ganesan,InternalCombustionEngines,TMH,2008
7. M.I.Khan,IndustrialEngineering,NewAgeInternational,2004

CE02	**EngineeringMechanics**	**2L:0T:0P**	**2Credits**

CourseObjectives: Studentswillabletounderstandthebasicengineeringmechanics concept.

CourseContent:

Module 1: Introduction to Engineering Mechanics concepts   (10 Hrs)

SystemofForces,ComponentsinSpace–Resultant,MomentofForcesanditsApplication; Couples and Resultant of Force System, Equilibrium of System of Forces, Free body diagrams, Equations of Equilibrium of Coplanar Systems and Spatial Systems; Graphical and Analytical Treatment of concurrent and non-concurrent coplanar forces, force diagrams and Bow's notations, Lami's theorem, application to simple engineering structures and components

Module 2: Centre of Gravity and moment of Inertia   (10Hrs)

Parallel axis and Perpendicular axis theorem, Centroid of plane figures and centre of gravity of masses and forces, moment ofinertiaof areaand mass, radius of Gyration, principleaxes of sections and principle of inertia. Symmetrical as well as unsymmetrical Section.

Module3:IntroductiontoBeams   (8Hrs)

 Beams: Types of Beams: SimplySupported Beam, Overhanging Beam, Cantilever Beam. Types of Supports of a Beam or Frame: Roller, Hinged and Fixed Supports. Different Typesof Loading. Support Reaction of a Beam

Module4:IntroductionofTrusses   (10Hrs)

 Trusses: Meaning, Types, Basic Relation between Joint, Member and Reactions (m,j,r),Analysis of Plane Trusses: Method of Joints, Method of Sections.

Module 5: Shear Force and Bending moment   (10Hrs)

Introductions to shear force and Bending Moment and to draw shear force and bending moment diagram for Point Load, UDL and UVL for Cantilever and Simply supported beam.

CourseOutcomes:

Studentswillbeableto

CO1: Apply concepts of forces, their resolution and applications in engineering practice.

CO2: Compute centroid, Centre of gravity and moment of inertia of various symmetrical and unsymmetrical sections.

CO3: Understand the basic concept ofBeams, Supports, Loads and their Types.

CO4: UnderstandthebasicconceptofPlaneTrussesandthemethodsoftheiranalysis.

CO5: Introducetheconceptofshearforceandbendingmomentdiagram

Textbooks/References:

1. Beer,Pierre,F.,Johnston,E.R.,Eisenberg,E.R.,Mazurek,D.F.,Clausen, W.E.andCornwell,P.J..

Vectormechanicsforengineers.Vol.4.NewYork:McGraw-Hill,1977.

2. PrasadI.B.,AppliedMechanics,KhannaPublication,19th edition,2018.

3. PrakashS.andMogaveer;ElementsofCivilEngg&Engg.Mechanics;PHI,2012.

4. Timoshenko,StephenP.,Mechanicsofstructure,EastWestpressPvt.Ltd,1995.

5. RajputR.K.,EngineeringMechanics,S.Chand&Co., 2013

6. Verma,M.K.,IntroductiontoMechanics",UniversitiesPress,2016.

EE01	BasicElectricalEngineering	2L:0T:0P	2Credits

CourseObjectives:

To acquaint students with the basic concepts and properties of electrical circuits & magnetic circuits,alongwiththeconstruction,operation &itspracticalapplicationsrelatedtosingle/threephase circuits, transformers & rotating machines and measuring instruments.

CourseContents(Module1to5):

Module1:DCcircuits&magnetic circuits (6Hrs.)

a) **DC Circuits:** Active & passive elements, voltage & current sources, voltage divider &current divider rules, Kirchoff's laws, star-delta transformation, energy and power in elements.

b) **Magnetic Circuits:** M.M.F., field strength, flux density, reluctance, comparison between electric andmagnetic circuits,energystoredinmagneticcircuits,Faradays lawsofelectromagneticinduction, B-H curve for magnetic & non-magnetic materials,hysteresis and eddy current losses.

Module2:Single&ThreephaseAC Circuits (6Hrs.)

a) **Single phase AC Circuits:** Circuit analysis in sinusoidal steady state, concept of phasor, impedance,admittance,phasordiagrams,complex,realandreactivepowerinaccircuits,powerfactor and power factor correction, electricity distribution system inhouses.

b) **ThreephaseACCircuits:** Advantagesofthreephasesystem, phasesequence,relationbetween line and phase quantities for balanced star/ delta connected circuits, power measurement in three phase circuits.

Module 3: Single Phase & Three Phase Transformers (6 Hrs.)

Construction&workingprincipleoftransformer,transformerratings,EMFequation,equivalent circuits,

phasor diagram, voltage regulation, losses & efficiency.

Elementary idea about generation of three phase power by Conventional/ Renewable energy sources.

Types of transmissions/ distribution systems, Statistical data in respect of power generation & transmission voltages in India.

Module4:Introduction toSingle/ThreePhase Machines (5Hrs.)

Introductiontosinglephasemachines&itsapplications.

Construction,principle&applicationsofthreephasesynchronousgenerator/motors,threephase induction motors.

Module 5: Measuring Instruments and Circuit Protection devic (4Hrs)

Workingprinciple&typesofVoltmeters,ammeters,wattmeter,multi-meterandenergy meter, fuses and miniature circuit breakers (MCBs).

CourseOutcomes: Students willbeableto:

CO1:formulate andanalysesbasicelectricandmagneticcircuits.

CO2:analysessingle&threephaseACcircuitsandpowerfactorimprovement.

CO3: understand the basic principles of working & performance of single/ threephasetransformers.

CO4:understandthebasicprinciplesofworking&performanceofsingle/threephaserotatingmachines **CO5:** understand/ explain the types of measuring instruments for electrical quantities.

Textbooks/References:

1. VincentDelToro,"ElectricalEngineeringFundamentals",Prentice-Hallof India.

2. D.P.Kothari,I.J.Nagrath,"BasicElectricalEngineering",TMHPublishingCo.Ltd.,New Delhi, 3rd edition.

3. J.B.Gupta,"BasicElectricalandElectronicsEngineering",Publisher:S.K.Kataria&Sons;Edition: 6th 2011; Reprint: 2020.

4. V.N.MittalandArvindMittal,"BasicElectricalEngineering"McGrawHi

5. R.S.Muller,T.I.Kamins,"ElectronicsforIntegratedCircuits",3[rd]edition,Wiley-India,New Delhi, 2012.

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B.Tech.FirstYear(I&IISemester)

Branch- Common to All Disciplines

Course Category	SubjectTitle	SubjectCode	L	T	P	Credit
HSMC	CommunicativeEnglish	HS02	2	0	0	2

Course Objectives:
MakestudentsproficientinEnglishlanguagetomeettheirfuturisticprofessionalpurposes.

Course Contents:

Module-I
BasicsofGrammarandVocabularyDevelopment:
Articles, Tenses, Types of Sentences, Subject-Verb Agreement, Prefixes and Suffixes in English, Synonyms, Antonyms, One Word Substitution, Homophones, Homonyms, Analogy, Idioms, Proverbs and Phrasal Verbs, Jargon (Business, Political, Financial, Linguistic, Military, Legal, Workplace, Medical, Technical, Foreign Affairs)

Module-II
FundamentalsofCommunication:
Definition of Communication, Process of Communication, 7C's of Communication, Types of Communication: Verbal and Non-Verbal Communication and its types, Barriers to Communication and ways to overcome it.

Module- III
ReadingSkills:
IntroductionandBenefitsofReading,TypesofReading,TechniquesofReading(SQ3R method), Reading Comprehension, Cloze Passages, Para Jumbled

Module- IV
WritingSkills:
Planning, Drafting and Editing, Précis writing, Structure of formal letter, Types of letters: Enquiry, Quotation, Order, Complaint, Adjustment, Resume, CV & Cover letter (Job Application)

Module –V
LearningLanguagethroughLiterature:
1. **Non-Fiction**:AtomicHabitsbyJamesClear
2. **LiteraryBook**:WiseandOtherwisebySudha Murthy
3. **Poem**: TheNight ofthe ScorpionbyNissimEzekiel

Student will select literature and do the assigned work under the mentorship ofa teacher individually or in group.

Course Outcomes:
CO1:Toapplyfunctionalgrammarandtoenrichvocabularyofthestudentsbylearningthe formation of new words through suffixes-prefixes, synonyms-antonyms.

CO2:To understandandapplycommunicationtheory,practiceandreadyforbetterpresentation in

professional life.

CO3:Tohelpcomprehend,interpretanddevelopreadingcomprehension.

CO4:Toidentify andapply theskills,elementof businessletter writinganddraftingin office communication.

CO5:Toanalyze,interpret, summarizeandparaphrasethroughselectedliterature(bookreview).

Text Books
1. Murphy'sEnglishGrammarbyRaymondandMurphy:CambridgeUniversity,New Delhi, 2008.
2. RemedialEnglishGrammarbyF.T. Wood,Macmillan, 2007.
3. Essential EnglishGrammarbyRaymondandMurphy,CambridgeUniversity,New Delhi, 2012.
4. EnglishforEffectiveCommunicationbySanjayKumarandPushpLata:OxfordUniversity Press, New Delhi 2015.
5. English Language Skills by Aruna Koneru: McGraw HillsEducation(India) Pvt. Ltd., New Delhi, 2015.
6. CollectedPoem1952-1988,NizimEzekiel,Oxford UniversityPress,1989
7. AtomicHabitsbyJamesClearRandomHouse BusinessBooks(30October2018)
8. Wise and Otherwise by Sudha Murthy Penguin India; Revised edition (18 July 2006); Penguin India
9. CommunicationSkillsbyNeetaSharma:SatyaPrakashan,TechIndiaPublication, New Delhi,2019.

ReferenceBooks
1. Aarts,Bas (2011). Oxford Modern English Grammar,New York: Oxford University Press
2. Ajmani,J.C.GoodEnglish:Getting itRight.NewDelhi:RupaPubications, 2012.
3. Collins,Patrick. SpeakwithPowerandConfidence. NewYork:Sterling, 2009.
4. Dhanavel,S.P.(2010).Englishandsoftskills(V-1).Chennai:OrientBlackswan.
5. Fitikides,T. J.CommonMistakesinEnglish.London:Orient Longman, 1984.
6. Rutherford,AndreaJ.BasicCommunication SkillsforTechnology:SecondEdition. Delhi: Pearson Education, 2007.
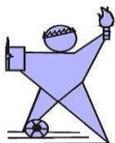
IPS Academy
Institute of Engineering & Science
(AUGC Autonomous Institute, Affiliated to RGPV, Bhopal)
LC - Applied Chemistry
(Common for All Branches)

LC-CH-01	Applied Chemistry	P-2	1

1) Determine the chloride ion in a given water sample by Argentometric method.

2) To determine total hardness of given water sample by Complexometric titration method.

3) Determine the types of alkalinity in terms of $CaCO_3$ equivalents in given water sample.

4) To find out the viscosity index of given lubricating oil with change in temperature by Redwood viscometer No.1.

5) Determination of cloud point & pour point of lubricating oil sample.

6) Determination of the flash & fire points of the given lubricating oil sample by Penskey Marten's Apparatus.

7) Determination of flash & fire points of the given lubricating oil sample by Abel's Apparatus.

8) Study of Ultraviolet–Visible spectrophotometer.

9) To determine the total dissolved solids in a given water sample.

10) Calculate the percentage moisture content in a given sample of coal.

Course Outcome: Students will be able to:

CO1: Students will be able to determine the hardness, amount of Chloride and alkalinity in water.

CO2: Students will be able to study the properties of lubricant to compare their quality. CO3:

Students will be able to define and analyze the characteristics.

CO4: Students will be able to learn advanced instrumental techniques.

CO5: Students will be able to demonstrate basic properties of coal and its analysis. learn safety rules in the practice of laboratory investigations

SuggestedReading

1. EngineeringChemistry,ShashiChawla,DhanpatRai&Co.(P) Ltd.
2. EngineeringChemistry,Baskar,WileyIndiaResearch Gate.
3. InstrumentalMethodsofChemicalanalysis,WillardDean,Merrittee,TataMacGrawHill Ltd.
4. LaboratoryManual EngineeringChemistry,Anupama Rajput, DhanpatRai&Co.
5. PracticalJournalofEngineeringChemistry,Dr.B.K.Mishra,Balajilearning Books.

CE02(P)	**EngineeringMechanicsLab**	**0L:0T:2P**	**1Credit**

ListofExperiment:

1. Toverifylawofparallelogramofforces

2. Toverifythelawoftriangleofforces

3. To verifythepolygon law offorces

4. Toverifylami'stheorem

5. Toverifythelawofmomentsusingbellcranklever**.**

6. Tofindthesupport reactionsofasimplysupportedbeam.

7. Todeterminemomentofinertiaofagivenfly-wheelaboutitspolaraxis.

8. To determine the coefficient of friction of differentparts of the surface on horizontal plane using different materials.

9. To determine the mechanical advantage, velocity ratio and mechanical efficiency of the simplewheel and axle.

CourseOutcomes:

Studentswillbeableto

CO1. Applyconceptsofforces,theirresolutionandapplicationsinengineeringpractice.

CO2. Computecentroid,Centreofgravityandmomentofinertiaofварioussymmetrical**and unsymmetrical sections.**

CO3. UnderstandthebasicconceptofBeams, Supports,LoadsandtheirTypes.

CO4. UnderstandthebasicconceptofPlaneTrussesandthemethodsoftheiranalysis.

CO5. Introducetheconceptofshearforceandbendingmomentdiagram.

Textbooks/References:

1. Sharma,A.K.(2009),"EngineeringMechanicsPractical".

EE01(P)	BasicElectricalEngineeringLab	0L:0T:2P	1Credits

CourseObjectives:

To acquaint students with the basic concepts and properties of electrical circuits & magnetic circuits, along with the construction, operation & its practical applications related to single/ threephase circuits, transformers & rotating machines and measuring instruments.

ListofExperiments

1. ToverifyKVLand KCL.

2. Todeterminethevalueofresistanceandinductanceofachokecoil.

3. Measurementof3phasepowerby1,2&3wattmetermethod.

4. Tostudy&analysisofseriesR-L-C circuit.

5. Tostudy&analysis ofparallel R-L-C circuit.

6. Toperformtheopencircuittestandshortcircuittestofasinglephasetransformer.

7. ToperformLoadTestonsinglephasetransformerfordeterminingtheefficiency&voltage regulation.
8. Constructionalstudyofrotatingelectricalmachines.

9. Toobtaintheturns ratio&efficiencyofsinglephasetransformerbydirectloading.

Course Category	SubjectTitle	SubjectCode	L	T	P	Credit
HSMC	LanguageLab	HS02(P)	0	0	2	1

List ofExperiments:

1. ListeningComprehensionanditsinterpretation(Audiowillbeselectedbytheinstructor)
2. SituationalConversation:Conversationthrough dialoguepracticebased onvarioussituations.
3. ReadingComprehension:IntensiveReadingSkill,RapidReadingandReadingAloud.
(Note: Reading material to be selected by the teacher.)
4. SpeakingSkills:Oral Presentation,Extemporary, JAM,Group Discussion
5. Resume Writing: Preparation of Digital Resume & Video
ResumeOptional:DevelopingCriticalThinkingthroughFilmRevieworBookRevi
ew
6. PracticesessionthroughGlobarenaEnglishLabSoftwarein LanguageLab

CourseOutcomes (Cos)

CO1: Toapplyfunctional grammarandtoenrichvocabularyofthestudentsbylearningthe formation of
new words through suffixes-prefixes, synonyms-antonyms.
CO2: Tounderstandandapplycommunicationtheory,practiceandreadyforbetter presentation
in professional life.
CO3: Tohelpcomprehend,interpretanddevelopreadingcomprehension.

CO4: Toidentifyandapplytheskills,elementofbusinessletterwritinganddraftinginoffice communication.
CO5: Toanalyze,interpret,summarizeandparaphrasethroughselectedliterature(book review).

Lab Software:

1.GlobarenaSoftware,License version.

SBC–ME 01(P)	TechShopLab	0L:0T:2P(2Hrs)	Credits:01

Prerequisite(s):NIL

LISTOFEXPERIMENTS

Fittingshop:

- Preparationofworkpieceasper thegivenspecifications.
- Practicemarkingoperations.

Carpentry:

- StudyofCarpentryTools,Equipmentanddifferentjoints.
- PracticeofCrossjoint,Tjoint.

Foundry

- Studyoftools usedinfoundry.

Welding:

- StudyofTools,Equipmentusedinwelding.
- TIG Welding
- MIGWelding

Machineshop:

- Studyofmachinetoolsinparticular Lathemachine
- DemonstrationofdifferentoperationsonLathemachine

At theendofthiscourse, thestudentsshouldbeableto:

- Buildjobof Fittingshop.
- Demonstratecarpentry toolsandconstructjob.
- Demonstratethefoundryshop.
- Demonstratethewelding.
- Explainthedifferenttypes ofmachiningoperations.

TextBooks:

1. RaghuwanshiB.S.,WorkshopTechnologyVol.I&II,DhanpathRai&Sons.

2. KannaiahP.andNarayanaK.L.,WorkshopManual,2ndEdn,Scitechpublishers.

3. JohnK.C.,MechanicalWorkshopPractice.2ndEdn.PHI2010.

4. JeyapoovanT.andPranithaS.,EngineeringPracticesLabManual,3rdEdn.VikasPub.2008.