



C. U. SHAH UNIVERSITY

FACULTY OF: -Technology & Engineering
DEPARTMENT OF: -Humanities
SEMESTER: - I **CODE:** -DEHM101
NAME – Basic Mathematics (BM)

Teaching & Evaluation Scheme:-

Subject Code	Name of the Subject	Teaching Scheme				Evaluation Scheme								
		Th	Tu	Pr	Total	Theory					Practical (Marks)			Total
						Sessional Exam		University Exam		Total	Pr/ Viva	TW	Total	
						Marks	Hours	Marks	Hours					
DEHM101	Basic Mathematics (BM)	2	2	0	4	30	1.5	70	2.5	100	30	20	50	150

Objectives: -

- Proficiency in Basic Mathematical tools
- Understanding the new basic concepts
- Apply the concepts and principles of mathematics to solve simple engineering problems

Prerequisites: -

- Addition, Subtraction, Multiplication, Division, Factorizations, Expansions and Trigonometric ratios.

Course Outlines:-

Sr. No.	Course Contents	Number of hours
1	Logarithm: Concept, Logarithm rules, Examples based on rules(without using log tables)	6
2	Binomial Theorem: Meaning of the term $n!$ (factorial n) and nCr , Expansion of $(x + y)^n$, $n \in \mathbb{N}$, General term T_{r+1} of $(x + y)^n$, Examples of finding any term, middle term, constant term and Coefficient of x^r , Expansion of $(x + y)^n$, $n \in \mathbb{Q}$, Examples of expanding $(x + y)^n$, $n \in \mathbb{Q}$ up to four terms, Finding approximate value using binomial theorem	12
3	Matrices: A brief idea of determinant of order two and three, Expansion of determinant s and its examples, Concepts of Matrix of order $m \times n$, Types of matrices, Scalar multiplication and addition of Matrices, Product of Matrices, Transpose and Adjoint of a	12



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	matrix, Inverse of a Matrix, Solution of simultaneous linear equations up to three variables.	
4	Trigonometry: Units of angles (Degree and radian), Allied angles, Compound angles , Multiple – submultiples angles, Sum and factor formulae, Inverse trigonometric function, Periodic function, Graphs of sine and cosine	20
5	Vector Algebra: Basic concept of Vector and Scalar, Geometrical representation of vectors, Addition, Subtraction and Scalar multiplication of vectors, Magnitude of vector and unit vector, Direction cosines of vector, Dot and Cross product of vectors, Applications (Work done by force and Moment of force)	10

Learning Outcomes:-

- Solve simple problems using concepts of Logarithms.
- Solve simple problems using concepts of binomial theorem like middle term, constant term, coefficient of $(x + y)^n$.
- Solve simultaneous equations using concepts of matrices.
- Solve simple problems using concepts of trigonometry.
- Solve simple problems using concepts of vectors.

Books Recommended:-

1. “Polytechnic mathematics” , **D. S. Prakash** ,S. Chand company ltd.
2. “Polytechnic Mathematics” , **S. P Deshpande** , Pune Vidyarthi Gruh Prakashan, 1984
3. “Engineering Mathematics(third edition)” , **Anthony croft and others** , Pearson Education,2012
4. “Advanced Mathematics for polytechnic” , **N. R. Pandya** , Macmillan Publishers India Ltd., 2012
5. “Applied Mathematics – I” , **W. R. Neelkanth** ,Sapna Publication



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FACULTY OF: -Technology & Engineering

DEPARTMENT OF: -Humanities

SEMESTER: - I **CODE:** -DEHM102

NAME – Basic English

Teaching & Evaluation Scheme:-

Subject Code	Name of the Subject	Teaching Scheme				Evaluation Scheme								
		Th	Tu	Pr	Total	Theory				Practical (Marks)			Total	
						Sessional Exam		University Exam		Total	Pr/Viva	TW		Total
						Marks	Hours	Marks	Hours					
DEHM102	Basic English	02	02	00	04	30	1.5	70	2.5	100	30	20	50	150

Objectives:-

- To make students eligible to understand ideas expressed in English
- To make students eligible to understand and interpret technical language used in engineering.
- To make students express ideas in written form in English.
- To make students express ideas in oral form in English.
- To develop following linguistic/ behavioural skills of the diploma students.
- Form short questions and answers.
- Read and interpret instructions given in written form.
- Understand and interpret instructions given in oral form.
- Understand and interpret processes and procedures explained in oral and written form.
- Read paragraph silently and loudly.
- Report any speech/ event in oral and written form.
- Explain any process in oral and written form.
- Take notes after listening.
- Comprehend the summary of any material provided in oral and written form.
- Describe any situation and object.
- Understand and interpret words with the help of dictionary and even without dictionary.
- Develop habit of using dictionary.
- Use grammatically correct language in oral and written form.
- Learn how to learn new words, phrases and structures of the sentences and use them in their own language.
- Pronounce words correctly.

Prerequisites: -

- Have some knowledge of English language learnt at high school level.
- Know some general vocabulary of English.
- Know the difference in the word order of English and their mother tongue.



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- Have desire to learn English language more.

Course Outlines:-

Sr. No.	Course Contents	Number of Hours
1	Grammar: Determiners, Tenses and Conditionals, Subject Verb Accord, Auxiliary Verbs, Degree of Comparison, Voice, Indirect Speech, Prepositions, Connectors, Punctuations and Capitalization	20
2	Comprehension: Technical Comprehension Passages	15
3	Conversation Practice: Introducing, Meeting and parting, Requests, Seeking information, Giving information, Reporting events, Giving opinions, Seeking opinions, Giving explanations, Seeking assistance/help, Greetings	20
4	Comprehension of unseen passages	5
Total		60

Learning Outcomes:-

Students can

- Understand ideas expressed in English
- Understand and interpret technical language used in engineering.
- Express ideas in written form in English.
- Express ideas in oral form in English.
- Form short questions and answers.
- Read and interpret instructions given in written form.
- Understand and interpret instructions given in oral form.
- Understand and interpret processes and procedures explained in oral and written form.
- Read paragraph silently and loudly.
- Report any speech/ event in oral and written form.
- Explain any process in oral and written form.
- Take notes after listening.
- Comprehend the summary of any material provided in oral and written form.
- Describe any situation and object.
- Understand and interpret words with the help of dictionary and even without dictionary.
- Use grammatically correct language in oral and written form.
- Learn new words, phrases and structures of the sentences and use them in their own language.
- Pronounce words correctly.

Books Recommended:-

- 1) Essentials of English grammar and composition. **Pal Rajendra and Katyal H.C.** S. Chand, New Delhi. 2006
- 2) High school English grammar and composition. **Wren and Martin**, S. Chand and Company Ltd. New Delhi. 1994.
- 3) Advance English Grammar, **He wings, Martin**, Cambridge University Press, New Delhi, 2004.



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- 4) Conversation practice, **Taylor, Grant**, Tata McGraw hill, New Delhi, 2008.
- 5) A practical English Grammar, **Thomson and Martinet**, the English language book society and Oxford University Press, Delhi, 1960.



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DEPARTMENT OF: -Humanities

SEMESTER: - I **CODE:** -DEHM103

NAME – Environmental Science and Energy Management (ES & EM)

Teaching & Evaluation Scheme:-

Subject Code	Name of the Subject	Teaching Scheme				Evaluation Scheme								
		Th	Tu	Pr	Total	Theory					Practical (Marks)			Total
						Sessional Exam		University Exam		Total	Pr/Viva	TW	Total	
						Marks	Hours	Marks	Hours					
DEHM103	Environmental Science and Energy Management	3	0	2	5	30	1.5	70	2.5	100	30	20	50	150

Objectives:-

- Environmental Sciences and its components.
- Ecology, Ecosystem and Biogeochemical cycles.
- Different types of environmental resources.
- Major Global Problems surrounding us.
- Different techniques and sources of energy demand management.

Prerequisites: -

- Components of environmental science
- Ecological aspects of environment
- Natural resources
- Basics about global environmental problems.
- Basic methods to manage and to conserve environmental energy.

Course outline:-

Sr. No.	Course Contents	Number of Hours
1	Environmental Science :Introduction, Environment, Environmental engineering Factors of Environment Component parts of physical environment, Environmental education, Public awareness for environment, protection and its necessity, Slogans for environmental protection	3
2	Ecosystem of Environment : Introduction of Ecology, Meaning and some basic definitions, Basic idea and component of ecosystem, Food Chain, Ecosystem : Classification, Factors affecting it, Complete and In-complete ecosystem,	10



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	Ecological and Estonian Pyramids and defects in pyramid, Biogeochemical Cycles: Hydrologic cycle, Carbon cycle, Nitrogen Cycle, Phosphorus cycle, Sulphur cycle Biodiversity – meaning and explanation, Main factors cause rapid decrease in biodiversity	
3	Environmental Resources : Introduction, Various types of Environmental resources, Classification, Characteristic and uses of Environmental resources, Water Wealth : Sources of water – surface and subsurface sources, Forest resource : Forest and Environment, Deforestation – reasons Afforestation - Forest conservation, Remote sensing : Three factors of remote sensing – Explanation with chart, Use of remote sensing, Land : Types of land base on area – wet, waste and desert, Uses and abuses of land, reason for abuses of land	8
4	Global Environmental Problems : Introduction- Major Global problems - Acid rain, Green house effect, and Depletion of Ozone layer, Global warming, Acid rain : Explanation of Acid rain, Sources of Acid rain, Effect of Acid rain, Green house effect: Basic introduction and explanation, Types of Green House Gases , Effect of Green House Effects, Depletion of Ozone layer: Basic idea , Combustion of chemical with Ozone layer, Introduce C.F.C., Uses of C.F.C. Effect of Ozone layer depletion, Steps to protect it, Global Warming : Introduction of global warming, Measures against global warming	9
Energy Management		
5	Renewable Sources Of Energy : Introduction - Definition of energy and energy management, Forms of energy, sources and utilization, Energy management for renewable sources, Limitations of renewable sources, Introduce Conventional and Non-conventional sources, Distinction between them, Comparison of conventional and renewable sources	4
6	Solar Energy : Introduction, Solar constant, Solar radiation at Earth’s surface, basis idea of instruments measuring radiation and radiation parameter, Photovoltaic conversion , Its advantages, Semiconductor and P-N junction, Solar cell, Photovoltaic application, Solar collectors : Principle, Efficiency, Advantages, Solar pond, solar furnace, Solar energy application : Thermal application – solar water heater, solar cooker, community, solar cooker, solar dryer	10
7	Wind Energy And Bio-Mass Energy : Introduction- Wind measurement , Wind power- its advantages and disadvantages, Classification of wind energy conservation system, Windmills : Introduction and classification – horizontal and vertical, state their sub classification and explain classification of horizontal wind mills, Site selection for wind mills, Applications of windmill system, Bio-mass energy – Introduction, Photosynthesis, Biogas, and biogas plant, Classification of biogas plants, Principle and working of fixed-dome type biogas plant, Site selection for biogas plant, Size of biogas plant, Advantages and disadvantages of bio-mass energy	12
8	Energy Conservation And Management : Introduction, Energy conservation measures Smokeless stoves (Nirdhoom chulhas), its advantages, Conservation of energy in domestic appliances and in boiler, Energy management: in electric lighting, in transportation, power plant, industries.	4

List of experiments:-



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- To Study biomass energy by photosynthesis technique.
- To Study Conservation of energy by dutch-type wind mill.
- To Study Conservation of energy by solar furnace.
- To Study Conservation of energy by smokeless stoves.
- To Study Management of energy by solar cell.
- To Study management of energy by dome-typed biogas plant.
- To Study Conservation of energy by flat plate collector.
- To Study P-N junction diode in solar cell to conserve energy.

Note:- Above mentioned experiments related to conservation of energy is to be performed by industrial visit.

Learning Outcomes:-

- Awareness about environmental science and necessity of it.
- Basic idea about ecology and ecosystem with classification and model
- Food chain and biogeochemical cycles
- Comprehend biodiversity
- Various types of environmental resources, its characteristics and uses.
- Comprehend the major global environment problems and steps to reduce them.
- Introducing renewable sources of energy.
- Energy conservation and energy management by different types of energy resources.

Books Recommended:-

1. **G.D. Rai** “*Solar Energy Utilization*”, Khanna Publishers, Delhi
2. **K.C. Khandelwal, S.S.Mahdi** “*Biogas Technology*” Tata MGH
3. **John Willy & sons** “*Energy resources and supply*” New York.
4. **A.W. Culp** “*Principles of energy conservation*” Tata MGH



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FACULTY OF: - Technology & Engineering

DEPARTMENT OF: - Mechanical Engineering

SEMESTER: - I **CODE:** - DEME104

NAME – Fundamentals of Structure and Mechanical Engineering.

Teaching & Evaluation Scheme:-

Subject Code	Name of the Subject	Teaching Scheme (Hours)				Evaluation Scheme								
		Th	Tu	Pr	Total	Theory					Practical (Marks)			Total
						Sessional Exam		University Exam		Total	Pr/Viva	TW	Total	
						Marks	Hours	Marks	Hours					
DEME 104	Fundamentals of Structure and Mechanical Engineering	4	0	2	6	30	1.5	70	2.5	100	30	20	50	150

Objective: -

- To get basic knowledge of IC engine, Generator, Casting etc ...
- To get basic knowledge of Civil engineering
- To get basic knowledge of foundation and different types of material use in construction work.

Prerequisites: -

- Basic knowledge of science principles.

Course outline:-

Sr. No.	Course Contents	Number of Hours
	SECTION –I (CIVIL ENGINEERING)	
1	Introduction on Structure Engineering: Scope of Structural engineering, Need of structural engineering in today's era.	3
2	Foundation Of Machine: Purpose of Foundation, Failure of Foundation, Design of Foundation, Types of Loads acting on Foundations	4
3	Civil Engineering Drawing: Maps and Plans, Method of Projections(First and Third angle of projection), Abbreviations used in Building Drawing, Symbols for Materials, Doors, Windows and Furniture, Details shown in Building Drawing	5
4	Surveying And Levelling:	10



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	Principles of Surveying, Instruments required for surveying, Ranging of Survey lines, Compass Survey, Purpose of Levelling, Dumpy level, Tilting level and Why level?, Temporary adjustments of levels, Use of Prismatic compass, Procedure of Levelling	
5	Different Civil Engineering Material: Types of Construction Materials, Selection of Materials, Comparison between different materials, Water Cement ratio, Mixing and Handling of Concrete.	6
SECTION – II (MECHANICAL ENGINEERING)		
6	Metal Joining Processes And Foundry: Welding Process with their need, types, applications and working principles, Brazing and soldering process, Foundry Fundamental, casting process their applications.	6
7	Internal Combustion Engines: Classification, Working principle of petrol, diesel and gas engine, Main parts of I.C. engine and its functions, Difference between Two stroke and Four stroke engine.	4
8	Steam Generators And Prime Movers: Function and classifications, working principle of boilers, Accessories of boiler, Mountings of boilers, Uses of boiler, Classification of Prime movers, Types of energy sources used by prime movers, Working principle of turbine, Steam turbine	6
9	Hydraulics And Pneumatics Devices: Types of fluids used in hydraulic systems, Properties of fluid, Definition and types of pump, Working principle of centrifugal pump, Advantage and limitations of hydraulic systems, Introduction and use of pneumatics systems, Difference between Hydraulics and pneumatics devices, Principle of different parts of pneumatic system, advantage and limitations of pneumatic system	6
10	Power Transmission Devices: Basic need of it, Types of power transmission devices, Coupling- introduction and application, Gears- introduction and application, Belt drive- introduction and application	6

List of Experiments:-

- Practice and demonstrate about different ranging and surveying instruments.
- To Study about levelling.
- To Study about machine foundations.
- To Study about different construction materials.
- Demonstration of metal joining processes (arc welding, gas welding, brazing, soldering). And study about Precautions and safety during metal joining processes.
- Demonstration of I.C. Engines and working of its main parts.
- Study about steam generator (Cochran boiler) and its accessories and mountings.



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- Study about steam turbine, water turbine, and gas turbine.
- Demonstrate various power transmission devices (gears, belt drives, rope drives, chain drives, and couplings).

Learning Outcomes:-

- Know about different types instruments are using in Civil Engineering like Dumpy level, Engineering Compass, Metric Chain, Ranging Rod etc...
- Know about I C Engine and working of turbine.
- Know about Welding, brazing, Soldering and metal joining process.
- Know about steam generator and power transmission devices.

Books Recommended:

1. **R.K.Jain** “*Production Technology*” ,Khanna Publication
2. **S.K.Hajra Chaudari,A.K.Hajra Chaudhri**, “*Work shop Technology Vol-I,II*” , Media Promoters and Publication
3. **Dr M.B.Gohil, Dr J.N.Patel, Dr Gagiben.J.Rajpara,Prof G.P.Vadoria** “*Elements of Civil Engineering*” Atul Prakshan
4. **B.K.Shukla** ““*Elements of Civil Engineering*” Atul Prakshan
5. **R.S.Khurmi ,J.K.Gupta** “*Thermal Engineering*”S Chand
6. **Dr C D Sankhavara** “*Element of Mechanical Engineering*” Akshat Publication.



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FACULTY OF: - Technology & Engineering

DEPARTMENT OF: -Electrical Engineering

SEMESTER: - I **CODE:** -DEEE105

NAME – Basic Electrical Engineering (BEE)

Teaching & Evaluation Scheme:-

Subject Code	Name of the Subject	Teaching Scheme				Evaluation Scheme								
		Th	Tu	Pr	Total	Theory				Practical (Marks)			Total	
						Sessional Exam		University Exam		Total	Pr/Viva	TW		Total
						Marks	Hours	Marks	Hours					
DEEE105	Basic Electrical Engineering (BEE)	4	0	2	6	30	1.5	70	2.5	100	30	20	50	150

Objectives:-

- To developed the basic knowledge of principles & concept of electrical parameters
- Solve electrical circuit using circuit laws & network theorems
- Understanding of working principle, construction & application of electrical machine
- To developed the basic of protective equipments & safety norms

Prerequisites: - Basic knowledge of physics & mathematics & Importance of Electricity

Course Outlines:-

Sr. No.	Course Contents	No Of Hours
1	Fundamental of electrical circuit:- Current, voltage, E.M.F., potential difference, Conductor, semiconductor, insulator, Resistance, unit of resistance, Laws of resistance, Factor affecting on resistance, Specific resistance, Conductance, Conductivity, Temperature Co-efficient of resistance, Ohm's law and affecting parameters, Three states of electrical Circuit(Open Circuit, Short Circuit, Close Circuit)	6
2	Electrostatic & Electromagnetic :- Capacitor, Electrical Field strength & electrical field density, Relative Permeability, Energy store in capacitor, Capacitor in series & parallel, Types of capacitor, Charging & Discharging of capacitor, Terminology, Laws of Electromagnetic induction, Self inductance, Mutual inductance & Co-efficient of coupling, Magnetic Hysteresis & eddy current, B-H curve	8
3	Work, Power & Energy:- Nature of unit, S.I. System of unit, Terminology, Joule's law of electrical heating, Thermal efficiency	5



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4	D.C. Circuit Terminology, Energy source & conversion, KVL & KCL, Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Maximum Power transfer Theorem, Reciprocity Theorem, Star-Delta transformation or Vice Versa	8
5	A.C. Fundamental & Circuit:- Generation of Alternating current & voltage & its equation, Waveform & vector representation of Alternating quantity, Terminology, RMS value, Average value, A.C. through Resistor, A.C. through Inductor, A.C. through Capacitor, Power, Power factor, Impedance & Q factor, RL Series circuit, RC Series circuit, LC Series circuit, RLC series circuit, RLC parallel circuit, Series Resonance & Parallel Resonance	10
6	Poly Phase System:- Generation of poly phase voltage, Phase sequence, Numbering phase & Interconnection of three phase, Star connection, Delta connection, Measurement of electrical power in 3-phase circuit by one & three watt meter method, Balance & Unbalance 3-phase load circuit, Advantage of 3-phase system	6
7	Fundamental Of Electrical Machine:- D.C. Generator, types & application, D.C. Motor, types & application, Needs of starter & its types, Transformer, Induction motor, Alternator, Single phase motor	9
8	Utilization & Protection Of Electrical Power Utilization- Heating, Welding, Domestic use, Different types of wiring, Protection Industry, Circuit Breaker, Relay, Isolator, Earth Switch, Domestic-Fuse, MCB, ELCB, Electrical Safety & Earthing, Necessity, Types, Electrical accident & its effect	8

List of Experiments:-

- Identify & draw symbol used in electrical engineering.
- To verify Ohm's Law.
- Perform Kirchoff's Law.
- Perform Superposition Theorem.
- Perform Thevenin's Theorem.
- Perform series & parallel connection of Resistor.
- Perform series & parallel connection of Capacitor.
- To measure current, voltage & power in single phase circuit.
- To measure power & power factor in RL circuit.
- To measure power & power factor in RLC circuit.
- Current, voltage & power measurement in star & delta poly phase circuit.
- To study about different electrical machine.
- To study about protective device & safety rules for electricity.

Learning Outcomes:-

- Application & importance of electrical power..
- Definition & identification of various electrical parameters.
- Calculation of different electrical parameters by different laws.
- Knowledge of different electrical machine.
- Knowledge of protective equipments & safety norms.



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Books Recommended:-

1. Elements of electrical engineering, **J.B.Gupta** ,S.k.katariya & sons
2. A text book of electrical technology, **B.L.Theraja & A.K.Theraja**, S.Chand & Company ltd.
3. A Hand Book Of Electrical Engineering, **S.L.Bhatiya**, Khanna Publication



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FACULTY OF: - Technology & Engineering

DEPARTMENT OF: -Computer Engineering

SEMESTER: - I **CODE:** -DECE106

NAME – Introduction to Computer Technology (ICT)

Teaching & Evaluation Scheme:-

Subject Code	Name of the Subject	Teaching Scheme				Evaluation Scheme								
		Th	Tu	Pr	Total	Theory					Practical (Marks)			Total
						Sessional Exam		University Exam		Total	Pr/Viva	TW	Total	
						Marks	Hours	Marks	Hours					
DECE 106	Introduction To Computer Technology (ICT)	3	0	0	3	30	1.5	70	2.5	100	00	00	00	100

Objectives:-

Basic computing Knowledge is very important in today's world. Computers are a part of our day to day life. Engineering students learn soft skills for overall development to solve their problems. Basic computing Knowledge is a necessity that aids the students to perform day to day operations. This course introduces the Students with basic Knowledge as a building block of their higher level computing skills.

Prerequisites: -Basic Computer Skills.

Course Outlines:-

Sr. No.	Course Contents	Hours
1	Introduction to Computer Definition, History of Computer, Characteristic and Advantage of Computer, Computer Generation, First, Second, Third, Fourth, and Fifth Generation, Hardware, Software.	06
2	Basic Computer Organization Introduction, Input Unit, Output Unit, Storage Device, ALU, Control Unit, CPU, RAM, ROM, HARD DISK, CD-ROM, SMPS.	04
3	Input and Output Device Introduction, Input Device, Keyboard, Mouse, Scanner, Joy Sticks Light Pen, Digital Camera, Output Device, Monitor (CRT, LCD), Printer, Types Of Printer.	04
4	Internet Introduction, History of Internet, How Internet Works? Advantage of Internet, WWW, E-mail, Email Organization, Component of Email, Advantage and Email, Term with Common Abbreviations (BTH, FAR, IMO, LR, SO, U, FYI, WRT, FOAF), Introduction And usage of Search	05



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	Engine, Introduction to HTML.	
5	Introduction to Virus Introduction, History of Virus, Working, How Does A Virus infects a Computer? Detection and Future of Virus.	04
6	Introduction to Programming Language Introduction, Problem Solving Techniques(Problem Definition, Problem Analysis, S/W Design, Software Maintenance And Documentation) Flowchart, Advantage and Limitation of Flowchart, Algorithm, Sample Algorithm, Representation of Algorithm, Classification of Programming Language(Modular Programming Language, Structure Programming Language, System Programming Language, Object Oriented Programming Language)	06

Learning Outcomes:-

The course content should be taught and implemented with the aim to develop different types of skills Leading to the achievement of the following competencies

- Basic computer skills.
- Hardware and software knowledge.
- Knowledge of Internet and virus.

Books Recommended:-

1. Computer Fundamentals By **Pradeep K Sinha, Priti Sinha** (BPB Publication).
2. Learning Computer By **Ramesh Bangia** (Khanna Publication).

E- Reference:-

1. www.historyofcomputer.org.
2. www.computerhope.com.
3. <http://www.fayette.k12.il.us/99/Intro2Comp/>.
4. <http://www.functionx.com>.



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FACULTY OF: - Technology & Engineering
DEPARTMENT OF: - Mechanical Engineering
SEMESTER: - I **CODE:** - DEME107
NAME – Basic Workshop

Teaching & Evaluation Scheme:-

Subject Code	Name of the Subject	Teaching Scheme (Hours) (Hours)				Evaluation Scheme								
		Th	Tu	Pr	Total	Theory				Practical (Marks)			Total	
						Sessional Exam		University Exam		Total	Pr/Viva	TW		Total
						Marks	Hours	Marks	Hours					
DEME107	Basic Workshop	0	0	2	2	0	0	0	0	0	50	50	100	100

Objectives: -

- To get knowledge of material, tool and various processes
- To get knowledge of various types of joints
- To understand safety

Prerequisites:-Basic knowledge of science.

Course Outline:-

Sr. No.	Course Contents	Numbers of Hours
1	Introduction to Workshop Use of Hand tools and Drawing preparation of Experiments to be performed.	2
2	Carpentry Exercise – I Preparation of job which Includes operations: Marking, Cutting and Planning.	4
3	Carpentry Exercise –II Preparation of job which Includes operations: Marking, Cutting, Tenoning, Mortising and Joining.	4
4	Fitting Exercise – I Preparation of job which Includes: Marking, Punching and Filing	4



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	(Squaring).	
5	Fitting Exercise – II Preparation of job which Includes operations: Marking, Punching, Cutting (Sawing) and Filing. (Fitting exercise will be performed into Two pieces).	4
6	Sheet Metal Exercise - I Preparation of job which Includes operations: Marking, Cutting, Bending and Seaming (Use Soldering process in seaming).	4
7	Welding Practice Exercise – I Preparation of job which Includes operations: Marking, Cutting, Edge preparation, Welding and Cleaning.	4
8	Turning Exercise – I (Demonstration) Preparation of job which Includes operations: Marking, Facing, Countersinking, Plain (Parallel) turning, Shoulder turning, Taper turning, Chamfering, Knurling and Threading. (This exercise may be demonstrated in a group of 10 students).	4

Learning outcomes:-

- Know about basic tools of work shop
- Know about soldering ,Brazing and Welding process
- Know about Lathe machine basic operation
- Know about planning and preparation for job

Book Recommended:-

1. **S.K.Hajrachudhri** “*Work shop Practice Volume-I, II*” ,Media promoters and Publication
2. **Swarna Singh** “*Work shop Practice*” , S.K.Kataria & Sons
3. **Dr R.K.Singal** “*Workshop Manual*” S.K.Kataria & Sons
4. **B.S.Rghuvanshi** “*Work shop Practice Volume-I, II*” Dhanpat Rai and Sons