

VELTECH HIGH TECH

Dr RANGARAJAN Dr. SAKUNTHALA ENGINEERING
COLLEGE

(Owned by Vel Trust 1997)

(An ISO 9001: 2008 Certified Institution)

Accredited By NAAC with 'A' Grade and NBA Accredited
Institution

(Approved by AICTE New Delhi and Govt. of Tamil Nadu, Affiliated to
Anna University Chennai)



SYLLABUS

WEEKLY SCHEDULE

III SEMESTER 2017-18

DEPARTMENT OF MECHANICAL ENGINEERING

IV YEAR DEGREE COURSE

#42, Avadi – Vel Tech Road,

Avadi

Chennai – 600062

Telephone – 044-26840181

E-mail: veltech@vsnl.com

Website : www.velhightech.com

Vision of the Institute

Elevating Well Being of Humanity by Augmenting Human Resource Potential Through Quality Technical Education and Training

Mission of the Institute

To effectuate supremacy in technical education through articulation of research and industry practices for social relevance. To inculcate the habit of lifelong learning
To exhibit professional ethics, commitment and leadership qualities

Vision of the Department

To become a centre of eminence in educating students to become triumphant mechanical engineers.

Mission of the Department

- To endue the students with the fundamentals of mechanical engineering with a passion for lifelong learning of industry practices
- To propagate lifelong learning.
- To impart the right proportion of knowledge blended with attitude and ethics in students to enable them take up positions of responsibility in the society and make significant contributions.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

- 1. Preparation and Breadth:** Graduates will apply their knowledge and skills, to solve the problems in the field of Mechanical Engineering occurring in industries and transportation.
- 2. Expertise:** Graduates of the programme will find employment as Mechanical engineers in engineering and business or will be admitted for higher studies.
- 3. Professionalism:** Graduates of the programme will solve problem with professionalism.
- 4. Lifelong Learning:** Graduates will be taught and exposed to the emerging technologies to cope up with technological obsolescence

PROGRAM OUTCOME (POs)

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct investigations of complex problems:** Use research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- 11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12. Lifelong learning:** Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

WEEK DETAILS

SL.NO.	WEEK	FROM	TO
1	WEEK1	24.06.17	24.06.17
2	WEEK2	27.06.17	01.07.17
3	WEEK3	03.07.17	08.07.17
4	WEEK4	10.07.17	15.07.17
5	WEEK5	17.07.17	22.07.17
6	WEEK6	24.07.17	29.07.17
7	WEEK7	31.07.17	05.08.17
8	WEEK8	07.08.17	12.08.17
9	WEEK9	16.08.17	19.08.17
10	WEEK10	21.08.17	26.08.17
11	WEEK11	28.08.17	02.09.17
12	WEEK12	04.09.17	09.09.17
13	WEEK13	11.09.17	16.09.17
14	WEEK14	18.09.17	23.09.17
15	WEEK15	25.09.17	30.10.17
16	WEEK16	03.10.17	07.10.17
17	WEEK17	09.10.17	14.10.17

SUBJECT CONTENTS

SL.NO	SUBJECT CODE	SUBJECT NAME
THEORY		
1	MA6351	Transforms and Partial Differential Equations
2	CE6402	Strength of Materials
3	ME6301	Engineering Thermodynamics
4	CE6451	Fluid Mechanics and Machinery
5	ME6302	Manufacturing Technology - I
6	EE6351	Electrical Drives and Controls
PRACTICAL		
7	ME6311	Manufacturing Technology Laboratory - I
8	CE6461	Fluid Mechanics and Machinery Laboratory
9	EE6365	Electrical Engineering Laboratory

TEST / EXAM SCHEDULE

SL.NO	SUBJECT CODE	SUBJECT NAME	UNIT TEST I	UNIT TEST II	Pre Model Exam	UNIT TEST IV
1	MA6351	Transforms and Partial Differential Equations	13.07.17 (FN)	27.07.17 (FN)	16.08.17	07.09.17 (FN)
2	CE6402	Strength of Materials	13.07.17 (AN)	27.07.17 (AN)	17.08.17	07.09.17 (AN)
3	ME6301	Engineering Thermodynamics	14.07.17 (FN)	28.07.17 (FN)	18.08.17	08.09.17 (FN)
4	CE6451	Fluid Mechanics and Machinery	14.07.17 (AN)	28.07.17 (AN)	19.08.17	08.09.17 (AN)
5	ME6302	Manufacturing Technology - I	15.07.17 (FN)	29.07.17 (FN)	21.08.17	09.09.17 (FN)
6	EE6351	Electrical Drives and Controls	15.07.17 (AN)	29.07.17 (AN)	22.08.17	09.09.17 (AN)

SL.NO	SUBJECT CODE	SUBJECT NAME	MODEL EXAM
1	MA6351	Transforms and Partial Differential Equations	28.09.17
2	CE6402	Strength of Materials	04.10.17
3	ME6301	Engineering Thermodynamics	06.10.17
4	CE6451	Fluid Mechanics and Machinery	09.10.17
5	ME6302	Manufacturing Technology - I	11.10.17
6	EE6351	Electrical Drives and Controls	13.10.17

MA6351 TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS

WEEK 1

Unit I: **PARTIAL DIFFERENTIAL EQUATIONS** Formation of partial differential equations – Singular integrals --

WEEK 2 Solutions of standard types of first order partial differential equations - Lagrange's linear equation

WEEK 3

Linear partial differential equations of second and higher order with constant coefficients of both homogeneous and non-homogeneous types

WEEK 4 UNIT TEST-I

UNIT II FOURIER SERIES

Dirichlet's conditions – General Fourier series – Odd and even functions – Half range sine series –

WEEK 5

Half range cosine series – Complex form of Fourier series

WEEK 6 – Parseval's identity – Harmonic analysis.

UNIT TEST-II

WEEK 7

UNIT III APPLICATIONS OF PARTIAL DIFFERENTIAL EQUATIONS

Classification of PDE– Method of separation of variables - Solutions of one dimensional wave equation –

WEEK 8

One dimensional equation of heat conduction – Steady state solution of two dimensional equation of heat conduction (excluding insulated edges).

WEEK 9 PRE MODEL EXAM

WEEK 10

UNIT IV FOURIER TRANSFORMS

Statement of Fourier integral theorem – Fourier transform pair –
Fourier sine and cosine transforms – Properties

WEEK 11

Transforms of simple functions

WEEK 12

Convolution theorem – Parseval's identity.

UNIT TEST-IV

WEEK 13

UNIT V Z - TRANSFORMS AND DIFFERENCE EQUATIONS

Z- transforms - Elementary properties – Inverse Z - transform (using
partial fraction and residues)

WEEK -14 REVISION 1-4 UNITS

Convolution theorem - Formation of difference equations – Solution of
difference equations using Z - transform

WEEK 15 -REVISION CLASS

WEEK-16 – MODEL EXAM

WEEK-17- MODEL EXAM

TEXT BOOKS

1. Veerarajan. T., "Transforms and Partial Differential Equations", Tata McGraw Hill Education Pvt. Ltd., Second reprint, New Delhi, 2012.
2. Grewal. B.S., "Higher Engineering Mathematics", 42nd Edition, Khanna Publishers, Delhi, 2012.
3. Narayanan.S., Manicavachagom Pillay.T.K and Ramanaiah.G "Advanced Mathematics for Engineering Students" Vol. II & III, S.Viswanathan Publishers Pvt Ltd. 1998.

REFERENCES

1. Bali.N.P and Manish Goyal, "A Textbook of Engineering Mathematics", 7th Edition, Laxmi Publications Pvt Ltd, 2007.

CE6402 STRENGTH OF MATERIALS

WEEK 1

UNIT I ENERGY PRINCIPLES

Strain energy and strain energy density – strain energy due to axial load, shear, flexure and torsion –

WEEK 2

Castigliano's theorems – Maxwell's reciprocal theorems - Principle of virtual work –

WEEK 3

application of energy theorems for computing deflections in beams and trusses - Williot Mohr's Diagram.

WEEK 4 UNIT TEST-I

UNIT II INDETERMINATE BEAMS

Concept of Analysis - Propped cantilever and fixed beams-fixed end moments and reactions –

WEEK 5

Theorem of three moments – analysis of continuous beams –

WEEK 6 shear force and bending moment diagrams.

UNIT TEST-II

WEEK 7

UNIT III COLUMNS AND CYLINDER

Euler's theory of long columns – critical loads for prismatic columns with different end conditions Rankine-Gordon formula for eccentrically loaded columns

WEEK 8

Eccentrically loaded short columns – middle third rule – core section – Thick cylinders – Compound cylinders

WEEK -9 PRE MODEL EXAM

.

WEEK 10

UNIT IV STATE OF STRESS IN THREE DIMENSIONS

Determination of principal stresses and principal planes – Volumetric strain

WEEK 11

Theories of failure – Principal stress - Principal strain – shear stress – Strain energy and distortion energy theories

WEEK 12

application in analysis of stress, load carrying capacity.

UNIT TEST-IV**WEEK 13 –****UNIT V ADVANCED TOPICS IN BENDING OF BEAMS**

Unsymmetrical bending of beams of symmetrical and unsymmetrical sections –

WEEK 14

Shear Centre - curved beams – Winkler Bach formula.

WEEK 15 -REVISION CLASS**WEEK-16 – MODEL EXAM****WEEK-17- MODEL EXAM****TEXT BOOKS:**

1. Rajput R.K. "Strength of Materials (Mechanics of Solids)", S.Chand & company Ltd., New Delhi, 2010.
2. Egor P Popov, "Engineering Mechanics of Solids", 2nd edition, PHI Learning Pvt. Ltd., New Delhi, 2012

REFERENCES:

1. Kazimi S.M.A, "Solid Mechanics", Tata McGraw-Hill Publishing Co., New Delhi, 2003
2. William A .Nash, "Theory and Problems of Strength of Materials", Schaum"s Outline Series, Tata McGraw Hill Publishing company ,2007.
3. Punmia B.C."Theory of Structures" (SMTS) Vol 1&II, Laxmi Publishing Pvt Ltd, New Delhi 2004.
4. Rattan.S.S., "Strength of Materials", Tata McGraw Hill Education Pvt.Ltd., New Delhi, 2011.

ME6301 ENGINEERING THERMODYNAMICS

WEEK 1 UNIT I

BASIC CONCEPTS AND FIRST LAW Basic concepts - concept of continuum, comparison of microscopic and macroscopic approach Path and point functions. Intensive and extensive, total and specific quantities.

WEEK 2 System and their types. Thermodynamic Equilibrium State, path and process. Quasi-static, reversible and irreversible processes. Heat and work transfer, definition and comparison, sign convention.

WEEK 3

Displacement work and other modes of work .P-V diagram. Zeroth law of thermodynamics – concept of temperature and thermal equilibrium– relationship between temperature scales –new temperature scales. First law of thermodynamics –application to closed and open systems – steady and unsteady flow processes.

WEEK 4 UNIT TEST-I

UNIT II SECOND LAW AND AVAILABILITY ANALYSIS 9

Heat Reservoir, source and sink. Heat Engine, Refrigerator, Heat pump. Statements of second law and its corollaries. Carnot cycle Reversed Carnot cycle, Performance. Clausius inequality. Concept of entropy, T-s diagram, Tds Equations, entropy change for - pure substance, ideal gases - different processes, principle of increase in entropy.

WEEK 2 Applications of II Law. High and low grade energy. Available and non-available energy of a source and finite body. Energy and irreversibility..

WEEK 6

Expressions for the energy of a closed system and open systems. Energy balance and entropy generation. Irreversibility. I and II law Efficiency

UNIT TEST-II

WEEK 7 UNIT III PROPERTIES OF PURE SUBSTANCE AND STEAM POWER CYCLE

Formation of steam and its thermodynamic properties, p-v, p-T, T-v, T-s, h-s diagrams. p-v-T surface Use of Steam Table and Mollier Chart.

Determination of dryness fraction. Application of I and II law for pure substances.

WEEK 8

Ideal and actual Rankine cycles, Cycle Improvement Methods - Reheat and Regenerative cycles, Economiser, preheater, Binary and Combined cycles.

WEEK 9 PRE MODEL EXAM

WEEK 10

UNIT IV IDEAL AND REAL GASES, THERMODYNAMIC RELATIONS Properties of Ideal gas- Ideal and real gas comparison- Equations of state for ideal and real gases-Reduced properties- .Compressibility factor-.Principle of Corresponding states. –

WEEK 11

Generalised Compressibility Chart and its use-. Maxwell relations, Tds Equations, Difference and ratio of heat capacities, Energy equation, Joule-Thomson Coefficient,

WEEK 12

Clausius Clapeyron equation, Phase Change Processes. Simple Calculations. **UNIT TEST-IV**

WEEK 13

UNIT V GAS MIXTURES AND PSYCHROMETRY 9 Mole and Mass fraction, Dalton"s and Amagat"s Law. Properties of gas mixture – Molar mass, gas constant, density, change in internal energy, enthalpy, entropy and Gibbs function. Psychrometric properties, Psychrometric charts.

WEEK 14

Property calculations of air vapour mixtures by using chart and expressions. Psychrometric process – adiabatic saturation, sensible heating and cooling, humidification, dehumidification, evaporative cooling and adiabatic mixing. Simple Applications

WEEK 15 -REVISION CLASS

WEEK-16 – MODEL EXAM
WEEK-17- MODEL EXAM

TEXT BOOKS :

1. Nag.P.K., “Engineering Thermodynamics”, 4th Edition, Tata McGraw-Hill, New Delhi, 2008.
2. Natarajan E., "Engineering Thermodynamics: Fundamentals and Applications", Anuragam Publications, 2012.

REFERENCES :

1. Cengel. Y and M.Boles, "Thermodynamics - An Engineering Approach", 7th Edition, Tata McGraw Hill, 2010.
2. Holman.J.P., "Thermodynamics", 3rd Edition, McGraw-Hill, 1995.
3. Rathakrishnan. E., "Fundamentals of Engineering Thermodynamics", 2nd Edition, Prentice- Hall of India Pvt. Ltd, 2006
4. Chattopadhyay, P, "Engineering Thermodynamics", Oxford University Press, 2010.
5. Arora C.P, “Thermodynamics”, Tata McGraw-Hill, New Delhi, 2003.
6. Van Wylen and Sonntag, “Classical Thermodynamics”, Wiley Eastern, 1987
7. Venkatesh. A, “Basic Engineering Thermodynamics”, Universities Press (India) Limited, 2007.
8. Kau-Fui Vincent Wong, "Thermodynamics for Engineers", CRC Press, 2010 Indian Reprint.
9. Prasanna Kumar: Thermodynamics "Engineering Thermodynamics" Pearson Education, 2013

CE6451 FLUID MECHANICS AND MACHINERY

WEEK 1

UNIT I

FLUID PROPERTIES AND FLOW CHARACTERISTICS

Units and dimensions- Properties of fluids- mass density, specific weight, specific volume, specific gravity,

WEEK 2

viscosity, compressibility, vapor pressure, surface tension and capillarity. Flow characteristics – concept of control volume –

WEEK 3

application of continuity equation, energy equation and momentum equation.

WEEK 4 UNIT TEST-I

UNIT II FLOW THROUGH CIRCULAR CONDUITS

Hydraulic and energy gradient - Laminar flow through circular conduits and circular annuli-Boundary layer concepts – types of boundary layer thickness –

WEEK 5

Darcy Weisbach equation –friction factor- Moody diagram-commercial pipes-

WEEK 6 minor losses – Flow through pipes in series and parallel.

UNIT TEST-II

WEEK 7

UNIT III DIMENSIONAL ANALYSIS

Need for dimensional analysis Methods of dimensional analysis – Similitude –types of similitude

WEEK 8

Dimensionless parameters- application of dimensionless parameters – Model analysis

WEEK 9 PRE MODEL EXAM

.

WEEK 10

UNIT IV PUMPS

Impact of jets - Euler's equation - Theory of roto-dynamic machines – various efficiencies–

WEEK 11

velocity components at entry and exit of the rotor- velocity triangles - Centrifugal pumps- working principle - work done by the impeller - performance curves

WEEK 12

Reciprocating pump- working principle – Rotary pumps – classification. **UNIT TEST-IV**

WEEK 13 -

UNIT V TURBINES

Classification of turbines – heads and efficiencies – velocity triangles. Axial, radial and mixed flow turbines. Pelton wheel, Francis turbine and Kaplan turbines- working principles –

WEEK 14

work done by water on the runner – draft tube. Specific speed - unit quantities – performance curves for turbines –governing of turbines.

WEEK 15 -REVISION CLASS

WEEK-16 – MODEL EXAM

WEEK-17- MODEL EXAM

TEXT BOOK:

1. Modi P.N. and Seth, S.M. "Hydraulics and Fluid Mechanics", Standard Book House, New Delhi 2004.

REFERENCES:

1. Streeter, V. L. and Wylie E. B., "Fluid Mechanics", McGraw Hill Publishing Co. 2010
2. Kumar K. L., "Engineering Fluid Mechanics", Eurasia Publishing House(p) Ltd., New Delhi 2004
3. Robert W.Fox, Alan T. McDonald, Philip J.Pritchard, “Fluid Mechanics and Machinery”, 2011.
4. Graebel. W.P, "Engineering Fluid Mechanics", Taylor & Francis, Indian Reprint, 2011

ME6302 MANUFACTURING TECHNOLOGY – I

WEEK 1

UNIT I METAL CASTING PROCESSES 9 **Sand Casting** : Sand Mould – Type of patterns - Pattern Materials – Pattern allowances –

WEEK 2

Moulding sand Properties and testing – Cores –Types and applications – Moulding machines– Types and applications; **Melting furnaces** : Blast and Cupola Furnaces;

WEEK 3

Principle of special casting processes : Shell - investment – Ceramic mould – Pressure die casting - Centrifugal Casting - CO₂ process – Stir casting; Defects in Sand casting 36

WEEK 4 UNIT TEST-I

UNIT II JOINING PROCESSES

Operating principle, basic equipment, merits and applications of : Fusion welding processes : Gas welding - Types – Flame characteristics; Manual metal arc welding –

WEEK 5

Gas Tungsten arc welding - Gas metal arc welding – Submerged arc welding – Electro slag welding; Operating principle and applications of : Resistance welding - Plasma arc welding – Thermit welding – Electron beam welding –

WEEK 6 Friction welding and Friction Stir Welding; Brazing and soldering; **Weld defects**: types, causes and cure. **UNIT TEST-II**

WEEK 7

UNIT III METAL FORMING PROCESSES

Hot working and cold working of metals – Forging processes – Open, impression and closed die forging – forging operations

WEEK 8

Rolling of metals– Types of Rolling – Flat strip rolling – shape rolling operations – Defects in rolled parts. Principle of rod and wire drawing – Tube drawing – Principles of Extrusion – Types – Hot and Cold extrusion.

WEEK 9 PRE MODEL EXAM

WEEK 10

UNIT IV SHEET METAL PROCESSES

Sheet metal characteristics – shearing, bending and drawing operations
– Stretch forming operations

WEEK 11

Formability of sheet metal – Test methods –special forming processes-
Working principle and applications – Hydro forming – Rubber pad
forming – Metal spinning

WEEK 12

– Introduction of Explosive forming, magnetic pulse forming, peen
forming, Super plastic forming – Micro forming

UNIT TEST-

IV WEEK 13

UNIT V MANUFACTURE OF PLASTIC COMPONENTS

Types and characteristics of plastics – Moulding of thermoplastics –
working principles and typical applications – injection moulding –
Plunger and screw machines – Compression moulding, Transfer
Moulding

WEEK 14

Typical industrial applications – introduction to blow moulding –
Rotational moulding – Film blowing – Extrusion – Thermoforming –
Bonding of Thermoplastics.

WEEK 15 -REVISION CLASS

WEEK-16 – MODEL EXAM

WEEK-17- MODEL EXAM

TEXT BOOKS:

1. Hajra Chouldhary S.K and Hajra Choudhury. AK., "Elements of workshop Technology", volume I and II, Media promoters and Publishers Private Limited, Mumbai, 1997
2. Kalpakjian. S, "Manufacturing Engineering and Technology", Pearson Education India Edition, 2006

REFERENCES:

1. Gowri P. Hariharan, A.Suresh Babu, "Manufacturing Technology I", Pearson Education, 2008
2. Roy. A. Lindberg, "Processes and Materials of Manufacture", PHI / Pearson education, 2006

3. Paul Degarma E, Black J.T and Ronald A. Kosher, "Materials and Processes, in Manufacturing" Eight Edition, Prentice – Hall of India, 1997.
4. Sharma, P.C., "A Text book of production Technology", S.Chand and Co. Ltd., 2004.
5. Rao, P.N. "Manufacturing Technology Foundry, Forming and Welding", 2ndEdition, TMH-2003; 2003

ME6351 ELECTRICAL DRIVES AND CONTROLS

WEEK 1

UNIT I INTRODUCTION Basic Elements – Types of Electric Drives – factors influencing the choice of electrical drives –

WEEK 2

heating and cooling curves – Loading conditions and classes of duty –

WEEK 3

Selection of power rating for drive motors with regard to thermal overloading and Load variation factors

WEEK 4 UNIT TEST-I

UNIT II DRIVE MOTOR CHARACTERISTICS Mechanical characteristics – Speed-Torque characteristics of various types of load and drive motors –

WEEK 5

Braking of Electrical motors – DC motors: Shunt, series and compound **WEEK 6** single phase and three phase induction motors.

UNIT TEST-II

WEEK 7 UNIT III STARTING METHODS

Types of D.C Motor starters –

WEEK 8

Typical control circuits for shunt and series motors – Three phase squirrel cage and slip ring induction motors.

WEEK 9 PRE MODEL EXAM

WEEK 10

UNIT TEST-III

UNIT IV CONVENTIONAL AND SOLID STATE SPEED CONTROL OF D.C. DRIVES Speed control of DC series and shunt motors –

WEEK 11

Armature and field control, Ward-Leonard control system –

WEEK 12

Using controlled rectifiers and DC choppers –applications.

UNIT TEST-IV

WEEK 13

UNIT V CONVENTIONAL AND SOLID STATE SPEED CONTROL OF A.C. DRIVES 10 Speed control of three phase induction motor – Voltage control, voltage / frequency control,

WEEK 14

slip power recovery scheme – Using inverters and AC voltage regulators – applications.

WEEK 15 -REVISION CLASS

WEEK-16 – MODEL EXAM

WEEK-17- MODEL EXAM

TEXT BOOKS

1. Vedam Subrahmaniam, “Electric Drives (concepts and applications)”, Tata McGraw-Hill, 2001
2. Nagrath .I.J. & Kothari .D.P, “Electrical Machines”, Tata McGraw-Hill, 1998

REFERENCES

1. Pillai.S.K “A first course on Electric drives”, Wiley Eastern Limited, 1998
2. Singh. M.D., K.B.Khanchandani, “Power Electronics”, Tata McGraw-Hill, 1998
3. Partab. H., “Art and Science and Utilisation of Electrical Energy”, Dhanpat Rai and Sons, 1994

ME6311 MANUFACTURING TECHNOLOGY LABORATORY – I

LIST OF EXPERIMENTS

Machining and Machining time estimations for :

1. Taper Turning
2. External Thread cutting
3. Internal Thread Cutting
4. Eccentric Turning
5. Knurling
6. Square Head Shaping
7. Hexagonal Head Shaping

CE6461 FLUID MECHANICS AND MACHINERY LABORATORY

LIST OF EXPERIMENTS

1. Determination of the Coefficient of discharge of given Orifice meter.
2. Determination of the Coefficient of discharge of given Venturi meter.
3. Calculation of the rate of flow using Rota meter.
4. Determination of friction factor for a given set of pipes.
5. Conducting experiments and drawing the characteristic curves of centrifugal pump/ submergible pump
6. Conducting experiments and drawing the characteristic curves of reciprocating pump.
7. Conducting experiments and drawing the characteristic curves of Gear pump.
8. Conducting experiments and drawing the characteristic curves of Pelton wheel.
9. Conducting experiments and drawing the characteristics curves of Francis turbine.
10. Conducting experiments and drawing the characteristic curves of Kaplan turbine.

EE6365 ELECTRICAL ENGINEERING LABORATORY

LIST OF EXPERIMENTS

1. Load test on DC Shunt & DC Series motor
2. O.C.C & Load characteristics of DC Shunt and DC Series generator
3. Speed control of DC shunt motor (Armature, Field control)
4. Load test on single phase transformer
5. O.C & S.C Test on a single phase transformer
6. Regulation of an alternator by EMF & MMF methods.
7. V curves and inverted V curves of synchronous Motor
8. Load test on three phase squirrel cage Induction motor
9. Speed control of three phase slip ring Induction Motor
10. Load test on single phase Induction Motor.
11. Study of DC & AC Starters
