IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

Scheme

S. No.	Subject Code	Category	Subject Name	Maximum Marks Allotted					Total Marks	Contact Hours per week			Total Credits
				Theory			Practical						
				End Sem.	Mid Sem. Exam.	Quiz/ Assignment	End Sem	Term work / Lab Work & Sessional		L	T	P	
1.	PCC-ME601	PCC	I.C. Engine	70	20	10	60	40	100	2	1	2	4
2.	PCC-ME602	PCC	Mechanical Vibration	70	20	10	60	40	200	2	1	2	4
3.	PCC-ME603	PCC	Power Plant Engg.	70	20	10	60	40	200	2	1	2	4
4.	PEC - ME601	PEC	Elective – I	70	20	10	-	-	100	4	0	0	4
5.	OEC- ME601	OEC	Open Elective – II	70	20	10	-	-	100	3	0	0	3
6.	PROJ - ME601	PROJ	Seminar – I	-	-	-	-	100	100	0	0	2	1
Total Academic Engagements and Credits										**13**	**3**	**08**	**20**
Total				**350**	**100**	**50**	**180**	**220**	**800**	**13**	**3**	**08**	**20**

*MST: Minimum of two mid semester tests to be conducted. L: Lecture T: Tutorial P: Practical

S. No.	Elective-I	Open Elective-II
1	PEC-ME601 (A) Gas Dynamics	OEC – ME601 (A) Metro System & Engineering
2	PEC-ME601 (B) Dynamics of Machines	OEC – ME601 (B) Process Modeling and Simulation
3	PEC-ME601 (C) Engineering Metrology	OEC – ME601 (C) Industrial Hygiene
4	PEC-ME601 (D) Production & Operation Management	OEC – ME601 (D) Basics of Python

IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

PCC-ME601	Industrial Engineering & Ergonomics	3L: 1T: 0P (4 Hrs)	4 Credits

Pre-requisite(s): Nil

Course Objective's:

To provide basic understanding to the students about the concept and significance of work study and ergonomics. To impart thorough knowledge to the students about various techniques of work-study for improving the productivity of an organisation. To inculcate the skill among the students for analysing and improving existing methods of working on the shop floor of an organisation. To impart through knowledge and skills to students with respect to allowances, rating, calculation of basic and standard time for manual operations in an organization.

Course Content:

Module 1 **(10 Hrs)**

Method Study: Purpose of work study, its objectives, procedure and applications; method study definition and basic procedure, selection of job, various recording techniques like outline process charts, flow process charts, man machine charts, two handed process charts, string diagram, flow diagram, multiple activity chart, simo, cyclographs and chrono-cyclographs; critical examination, development, installation and maintenance of improved method; principles of motion economy and their application in work design; micro motion study, memo motion study and their use in methods study.

Module 2 **(10 Hrs)**

Work Measurement Technique: Introduction & definition, objectives and basic procedure of work measurement; application of work measurement in industries; time study: basic procedure, equipments needed, methods of measuring time, selection of jobs, breaking a job into elements; numbers of cycles to be timed; rating and methods of rating, allowances, calculation of standard time. Work sampling**:** Basic procedure, design of work sampling study conducting work sampling study and establishment of standard-time. Methods Time Measurement (MTM)

Module 3 **(08 Hrs)**

Job Evaluation and Merit Rating: Purpose, Various types of jobs evaluation system and their application of classification. Wage Cure, Designing salary structure and Grade, Merit Rating, Performance Appraisal.

Standard data system**;** elemental and non-elemental predetermined motion systems, work factors system;

Module 4 **(08 Hrs)**

Wage Incentives: Various types of wage Incentive schemes and their impact on productivity, Comparison of different incentive plans, design of incentive plans, Group system of Wage payment, Supervisory incentive plans. Starlight line, Tailor, Merrick and Gantt incentive plans.

IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

Module 5 **(10 Hrs)**

Human Factor Engineering: Definition and history of development of human factors engineering, types & characteristics of man-machine-system, relative capabilities of human being and machines; development and use of human factor data; information input and processing: Introduction to information theory; factors effecting information reception and processing; coding and selecting of sensory inputs.

Course Outcomes:

After completion of the course student will be able to:

1. Understand the various work study techniques for productivity improvement
2. Understand the basic concepts of work measurement technique
3. Understand the various Job Evaluation techniques
4. Realization of the significance of wage Incentive schemes and their impact on productivity
5. Explain human factor engineering and its application.

Text Books:

1. ILO; work-study; International Labour Organization ,1992
2. Khan MI; Industrial Ergonomics; PHI Learning 1St 2010.
3. John R. Wilson, Evaluation of Human Work, 3rd Edition , NIGEL CORLETT – 2005.
4. M.I. Khan ,Industrial Engineering, New Age International (P) Limited, 2007.
5. Kumar Pravin,Industrial Engineering and Management, Pearson India, 2015.

Reference Books :

1. Sandera M and Mc Cormick E; Human Factors in Engg and design; MGHill,1993
2. Currie RM; Work study; BIM publications, 1964.
3. Mynard; Hand book of Industrial Engg, McGraw-Hill Education, 05-Jun-2001

IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

PCC-ME602	Mechanical Vibration	2L:1T:2P (5 Hrs)	04 Credits

Pre-requisite(s):
Theory of Machines

Course Objective's:
To dynamically analyze a mechanical system and

Course Content:

Module 1: **(08 Hrs)**

Fundamental Aspects of Vibrations: Vibration and its causes, advantages and disadvantages; engineering applications of vibration; vector method of representing harmonic motion; characteristics of vibration, harmonic analysis and beats phenomenon, work done by harmonic forces on harmonic motion; periodic non- harmonic functions- Fourier series analysis; evaluation of coefficients of Fourier series; elements of vibratory system; lumped and distributed parameter systems.

Undamped Free Vibrations: Derivation of differential equation of motion: Systems involving angular oscillations: the compound pendulum.

Module 2: **(10 Hrs)**

Damped Vibrations: Viscous damping: coefficient of damping; damping ratio; under damped, over damped and critically damped systems; logarithmic decrement; frequency of damped free vibration; Coulomb or dry friction damping; frequency, decay rate and comparison of viscous and Coulomb damping; solid and structural damping; slip or interfacial damping.

Module 3: **(10 Hrs)**

Harmonically excited Vibration: One degree of freedom- forced harmonic vibration; vector representation of forces; excitation due to rotating and reciprocating unbalance; vibration Isolation, force and motion transmissibility; absolute and relative motion of mass (Seismic Instruments). Whirling Motion and Critical Speed : Whirling motion and Critical speed : Definitions and significance. Critical speed of a vertical , light flexible shaft with single rotor : with and without damping . Critical speed of a shaft carrying multiple discs (without damping), Secondary critical speed.

Unit 4: **(08 Hrs)**

Systems with Muti-Degrees of Freedom: Un-damped free vibration of 2 d.o.f and Principal modes of vibration; torsion vibrations; Forced, Un-damped vibrations with harmonic excitation ; Coordinate coupling; Dynamic vibration absorber; torsion Vibration Absorber; Pendulum type of dynamic vibration.

IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

Module 5: **(06 Hrs)**

Noise Engineering: Frequency and sound dependent human response; the decibel scale; relationship between, sound pressure level (SPL), sound power level and sound intensity scale; relationship between addition, subtraction and averaging, sound spectra and Octave band analysis; loudness; weighting networks; equivalent sound level, auditory effects of noise; hazardous noise, exposure due to machines and equipments; hearing conservation and damage risk criteria, daily noise doze.

Course Outcomes:

After completion of the course student will be able:

1. Students will be able to find natural frequency of SDOF systems.
2. Students will be able to categorise damped system as under damped or critically damped.
3. Students will be able to deal with resonant condition.
4. Students will design and solve real world applications with increased DOF.
5. Students will design acoustically better applications (Based on SPL, Decibel Scale, Human Comfort Level etc.)

Text Books:

1. Mechanical Vibrations and Noise Engineering; Ambekar AG,3 e, 2006,PHI

Reference Books:

1. Mechanical Vibration , G.K. Grover, 8 e, Nem Chand Publishers.
2. Theory of Vibration with Applications, Thomson , W.T., 5-e, Pearson Education.

List of Experiment:

1. To find mass moment of inertia of a rod from its vibration as a compound pendulum.
2. To find damping coefficient and damped and undamped natural frequencies of an under-damped single degree of freedom system from its response to an initial displacement
3. To find MI of an object using Trifilar suspension.
4. To study, experimentally, the response of a SDOF system to harmonic excitation applied to the mass for different values of damping factor.
5. Tune a vibration absorber by varying dynamic system parameters.
6. To study the rotating imbalance and perform modal analysis of rotating shaft.

IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

PCC-ME603	Power Plant Engineering	3L:1T: 0P (04 hrs)	04 Credits

Pre-requisite(s): Nil

Course Objective's:

To introduce students to different aspects of power plant engineering. To familiarize the students to the working of power plants based on different fuels. To expose the students to the principles of safety and environmental issues.

Course Content:

Module 1 **(07 hrs)**

Introduction: Introduction to methods of converting various energy sources to electric power, direct conversion methods renewable energy sources, solar, wind, tidal, geothermal, bio-thermal, biogas and hybrid energy systems, fuel cells, thermoelectric modules, MHD-Converter

Module 2 **(08 hrs)**

Fossil fuel steam stations: Basic principles of sitting and station design, effect of climatic factors on station and equipment design, choice of steam cycle and main equipment, recent trends in turbine and boiler sizes and steam conditions, plant design and layout, outdoor and indoor plant, system components, fuel handling, burning systems, element of feed water treatment plant, condensing plant and circulating water systems, cooling towers, turbine room and auxiliary plant equipment., instrumentation, testing and plant heat balance.

Module 3 **(08 hrs)**

Nuclear Power Station: Importance of nuclear power development in the world and Indian context, Review of atomic structure and radio activity, binding energy concept, fission and fusion reaction, fissionable and fertile materials, thermal neutron fission, important nuclear fuels, moderators and coolants, their relative merits, thermal and fast breeder reactors, principles of reactor control, safety and reliability features.

Module 4 **(07 hrs)**

Hydro-Power Station: Elements of Hydrological computations, rainfall run off, flow and power duration curves, mass curves, storage capacity, salient features of various types of hydro stations, component such as dams, spillways, intake systems, head works, pressure tunnels, penstocks, reservoir, balancing reservoirs, Micro and pico hydro machines, selection of hydraulic turbines for power stations, selection of site.

Module 5 **(08 hrs)**

Power Station Economics: Estimation and prediction of load. Maximum demand, load factor, diversity factor, plant factor and their influence on plant design, operation and economics; comparison of hydro and nuclear power plants typical cost structures, simple problems on cost analysis, economic performance and tariffs, interconnected system and their advantages, elements of load dispatch in interconnected systems.

IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

Course Outcomes:

After completion of the course student will be able:

1. Understand the conversion of renewable energy system into electrical power.
2. Design & enhance the performance of fossil fuel based power plant.
3. Analyze the nuclear power plant and its safety
4. Design & enhance the performance of hydro based power plant.
5. Determine economics of the power plant of renewable and non renewable / nuclear power system

Text Books:

1. Rajput RK; A text book of Power plant Engg.; Laxmi Publications.

Reference Books:

1. Nag PK; Power plant Engg; TMH
2. Al-Wakil MM; Power plant Technology; TMH
3. Sharma PC; Power plant Engg; Kataria and sons, Delhi
4. Domkundwar; Power Plant Engg; Dhanpatrai & sons.

IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

PEC-ME601(A)	Gas Dynamics	3L: 0T: 0P (3 Hrs)	04 Credits

Pre-requisite(s):

Thermodynamics, Applied Thermodynamics and Fluid Mechanics.

Course Objective's:

To apply fundamental knowledge of thermodynamics for thermal performance of steam turbine, gas turbine, jet engine and their significance.

Course Content:

Module 1: **(08 Hrs)**

Gas Turbine: Introduction of gas turbine cycle, types of gas turbine plants, performance of open and closed cycle plant, Gas turbine with Intercooling, reheating and regeneration, cycle with combination of all parameters.

Module 2: **(09 Hrs)**

Compressible fluid Flow: Speed of sound, in a fluid mach number, mach cone, stagnation properties, one dimensional isentropic flow of ideal gases through variable area duct-mach number variation, area ratio as a function of mach number, mass flow rate and critical pressure ratio, effect of friction, velocity coefficient, coefficient of discharge, diffusers, normal shock.

Module 3: **(08 Hrs)**

Steady Supersonic two Dimensional flows: Two dimensional equations with and without conservative form, Mach waves, and oblique shock waves, Small Disturbance theory, centered Prandtl- Meyer rarefaction, supersonic flow of airfoils.

Module 4: **(09 Hrs)**

Steam Turbines: Types of turbines, Compounding, Velocity diagrams, Performance analysis, Reheat factor, Stage efficiency, Governing, and Losses in turbines, Problem based on their performance with velocity diagram.

Module 5: **(09 Hrs)**

Jet Propulsion: Jet Propulsion- Turbo jet, Turbo Prop, Ram jet, Rocket engines thrust power, propulsive efficiency and thermal efficiency, Jet propulsion performance, Specifying thrust and specific fuel consumption in each case for turbo jet and turbo propulsion units.

Course Outcomes

After completion of the course the students are able to:

1. Explain the types of gas turbine plant and their performance with operating characteristics.

2. Understand the concepts of one dimensional compressible fluid flow and Stagnation properties.
3. Understand the concepts of two dimensional compressible fluid flow and supersonic flow of airfoils.
4. Evaluate thermal performance of Steam turbine with Velocity diagram.
5. Understand the Concept of jet Propulsion and their application.

Text Book:

1. Yadav R., "Steam and Gas Turbines" Central publishing House.
2. S. C. Gupta, Thermal Engineering, Pearson Education.
3. D. S. Kumar, Thermal Science and Engineering, S. K Kataria & Sons
4. Mahesh M Rathore, Thermal Engineering , TMH
5. Nag P K, Engineering Thermodynamic, TMH

Reference Books:

1. T. D. Eastop and A. McConkey, "Applied Thermodynamics", Addison Wesley Longman.
2. Cengel and Boles, Thermodynamics: An Engineering Approach (Mechanical Engineering), McGraw Hills.
3. Sonntag, Van Wylen, fundamentals of Thermodynamics, Willy Edition.

IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

PEC-ME-601(B)	Dynamics of Machine	3L:0T: 0P (04 hrs)	03 Credits

Pre-requisite's:
Theory of Machine

Course Objective's:
To equip the student with fundamental knowledge of dynamics of machines so that student can appreciate problems of dynamic force balance, transmissibility of forces, isolation of systems, vibrations. Develop understanding of dynamic balancing, flywheel analysis, gyroscopic forces and moments. .

Course Content:

Module 1 **(09 Hrs)**

Dynamics of Engine Mechanisms: Displacement, velocity and acceleration of piston; turning moment on crankshaft, turning moment diagram; fluctuation of crankshaft speed, analysis of flywheel and Punching Press.

Module 2 **(07 Hrs)**

Governor Mechanisms: Types of governors, characteristics of centrifugal governors, gravity and spring controlled centrifugal governors, hunting of centrifugal governors, inertia governors.

Module 3 **(11 Hrs)**

Balancing of Inertia Forces and Moments in Machines: Balancing of rotating masses, two plane balancing, determination of balancing masses (graphical and analytical methods), balancing of rotors, balancing of internal combustion engines (single cylinder engines, in-line engines, V-twin engines, radial engines, Lanchester technique of engine balancing.

Module 4 **(07 Hrs)**

Friction: Frictional torque in pivots and collars by uniform pressure and uniform wear rate criteria. Boundary and fluid film lubrication, friction in journal and thrust bearings, concept of friction circle and axis, rolling friction.

Module 5 **(08 Hrs)**

Brakes: Band brake, block brakes, Internal and external shoe brakes, braking of vehicles. Dynamometer: Different types and their applications.

Dynamic Analysis of Cams: Response of un-damped cam mechanism (analytical method), follower response analysis by phase-plane method, jump and cross-over shock.

Course Outcomes:
After completion of this course, students will be able to:

1. Apply an understanding of analytical and graphical approach to engineering problems of turning moment.
2. Understanding the theoretical and practical concepts behind working of Governors and their application for various functions.
3. Analyzing the balancing of rotating masses that can be used in different machineries.

4. Understanding the working principle of pivots and frictional behavior of these pivots and collars.
5. Understand about different brakes and also function of different dynamometer.

Text Books:

1. Ambekar, AG; Mechanism and Machine Theory; PHI
2. Rattan SS; Theory of machines; TMH
3. Sharma and Purohit; Design of Machine elements; PHI
4. Bevan; Theory of Machines.

Reference Books:

1. Ghosh and Mallik; Theory of Mechanisms and Machines; Affiliated East-West Press, Delhi
2. Norton RL; kinematics and dynamics of machinery; TMH
3.Grover; Mechanical Vibrations
4. Balaney; Theory of Machines by
5.Theory of Vibrations by Thomson

IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

PEC -ME601 (C)	Engineering Metrology	3L: 0T: 0P (3 hrs.)	3 Credits

Pre requisite(s):

Manufacturing Process & Manufacturing Technology

Course Objectives:

1. To Understand metrology, its advancements & measuring instruments,
2. To Acquire knowledge on different standards of length, calibration of End Bars, linear and angular measurements, Screw thread and gear measurement & comparators.
3. To know about Measurement of surface roughness.
4. Equip with knowledge of limits, fits, tolerances and gauging.
5. To understand the Pre and Post Production Analysis.

Course Content:

Module 1: **(10 Hrs)**

Metrology : Introduction to Metrology: Definition, objectives and concept of metrology, Need of inspection, Principles, process, methods of measurement, Classification and selection of measuring instruments and systems. Accuracy, precision and errors in measurement. System of measurement, Material Standard, Wavelength Standards, Subdivision of standards, Line and End standards, Classification of standards and Traceability, calibration of End bars (Numericals), standardization.

Module 2: **(12 Hrs)**

Measuring Instruments : Linear measurement - Direct measuring tools, Comparators, Types, use and limitations, Optical Instruments, Projectors, Tool makers microscope, Sine bar, Angle gauge clinometers, Optical dividing head. Measurement and representation of Geometrical Features: Measurement of straightness, Flatness, Parallelism, Perpendicularity, Roundness, Cylindricity, Squareness and Symmetry, Interferometry and its applications.

Module 3: **(08 Hrs)**

Measurement of Surface Roughness: Measurement of surface roughness, E & M System, Surface roughness in various manufacturing processes. Measurement of Screw, Threads and Gears : Measurement of elements of screw, threads, pitch and effective diameter measurement and errors in screw threads elements and their effect, Inspection of gears, Various methods of measuring gear tooth thickness, Measurement of base pitch, PCD and profile, lead and roll testing

Module 4: **(10 Hrs)**

Interchangeability: Concept of limits fits and tolerances, Types of fits, Universal and local interchangeability, Systems of limits, fits and tolerances, Selective assembly and matched fits, B.S., I.S.O. and I.S. systems. Design of limit gauges, Types and their manufacture. In process inspection and control

IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

Module 5: **(10 Hrs)**

Manufacturing Analysis: Pre and Post Production Analysis, Process Planning, Part Print Analysis, Determination of Principle Processes, Blank making process, Determination of Functional surfaces of W/pc, Machining Allowances (limits of size for initial and intermediate W/pc dimensions). Work- piece control, Influence of Process Engineering on product design.

Course Outcome's:

After completion of the course student will be able:

1. Understand the objectives of metrology and its importance.
2. Describe slip gauges, wringing of slip gauges and building of slip gauges, angle measurement using sine bar.
3. Understand the gear measurement techniques.
4. Understand with concept of interchangeability.
5. Understand with concept of pre and post production analysis.

Text Books:

1. Gupta I. C., Metrology, Dhanpat Rai & Sons, New Delhi, India., 2004
2. Jain R. K., Metrology, Khanna Publishers, New Delhi, India .1984
3. Hume K. J., Engineering Metrology, McDonald, California, USA , 2015.
4. Thomas G Beckwith, N Lewis Buck and Roy D Marargoni, "Mechanical Measurements", Narosa publishing house, 1989.
5. Harshavardhan, "Measurements – Principles and Practice", Macmillan India Limited, 1993

Reference Books :

1. Turner, J.D., "Instrumentation for Engineers", Springer – Verlag, New yorkinc, 1988.
2. B.C.Nakra and Chaudhry, K.K., "Instrumentation and Analysis", TMH, 1985.
3. Doeblin E.O., Measurement Systems, McGraw-Hill, 2004.
4. John Bank, The Essence of Total Quality Management, Prentice Hall of India, 1998.
5. James I Bossert, Quality Function Deployment, ASQC quality press, Wisconsin, 1994.

IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

PCC - ME601(D)	Production & Operation Management	3L: 0T: 0P (3 Hrs)	03 Credits

Pre requisite(s):

Production process

Course Objectives:

1. To introduces the role of production management.
2. To introduces the concept of Plant layout and Material Handling.
3. To introduces the Strategies of Aggregate Planning
4. To know about maintenance procedure.
5. The course further introduces the scope of material management.

Course Content:

Module 1: **(10 Hrs)**

Production Management: Introduction, Systems concept, Decisions, Organization, Objectives and Evolution of Operations Management, Operations Strategy, Type of Production Systems. Role of Production Manager.

Module 2: **(10 Hrs)**

Facilities Planning & PPC: Plant location, Plant layout and Material Handling, Layout analysis, Procedures such as CORELAP, CRAFT etc. Organization & Functions of PPC CAPP, Make or Buy Decision, Forecasting Methods & its relationship with Product Life Cycle, Case Studies.

Module 3: **(10 Hrs)**

Aggregate Planning and Master Scheduling: Strategies of Aggregate Planning, Graphic & and Charting methods, Application of LP, Master Scheduling, Job Shop Scheduling and Sequencing Algorithms Gantt Chart, Line Balancing, LOB, Case Studies.

Module 4: **(10 Hrs)**

Maintenance Management: Types of maintenance strategies, Breakdown, Preventive and Predictive maintenance, Individual and Group Replacement Policies, Case Studies.

Module 5: **(10 Hrs)**

Materials Management: Purchasing, stores and vendor selection, Inventory Models, Selective Inventory Control, MRP, MRP-II, Lot size Techniques, Just - In - Time system of manufacturing, Kaizen, Total Productive Maintenance (TPM) . BPR, SCM, ERP etc. & Case Studies.

Course Outcomes:

After completion of the course student will be able:

1. To understand concept of production & operation management.
2. To understand & design the plant layout and Material Handling.

3. To understand the aggregate planning and master scheduling.
4. To understand maintenance procedure used in industry.
5. To understand the the concept of MRP I & MRP II.

Text Books:

1. Chitle A.K., Gupta R.C. Materials Management, PHI. 3rd Ed.2014.
2. Charry S.N., Production & Operations Management. TMH. 14th Reprint, 2007.
3. Chase, Acquilino, Production & Operations Management, TMH.1998.

Reference Books :

1. Dobler & Lee, Purchasing & Materials Management, PHI.1984.
2. Eilon S. Elements of Production Planning and Control, McMillon Pub. 1991.
3. Mike Pycraft , Operations Management. Pearson Education, 2000.

IPS Academy, Institute of Engineering & Science

(A UGC Autonomous Institute, Affiliated to RGPV, Bhopal)

Mechanical Engineering Department

B. Tech, VI Sem

PROJ-ME601	**Seminar - I**	**0L:0T: 2P (04 hrs)**	**Credits:01**

Before the end of semester, each student will have to deliver a seminar on a subject mutually decided by candidate and his/her guide. The student should select the topic for his/her seminar other than project work. The seminar topic should be latest and ahead of the scope of curriculum. The student, as a part of the term work, should submit the write-up of the seminar topic in duplicate, typed on A4 size sheet in a prescribed format and bound at the end of semester. The performance of the student will be evaluated on the basis of the contents, the presentation and discussion during the delivery of sem.