PEOPLE'S UNIVERSITY, BHOPAL

(Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **B. Tech. (Mechanical Engineering)** **Semester –IV**

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External	Internal	Total (100)	External	Internal	Total
BT-1401	Engineering Mathematics-III	3	1	-	(70)	(30)	Min: 40 (D Grade)	Nil	Nil	Nil

Duration of Theory (Externals): 3 Hours

Theory Internal- Max Marks: 30	Best of Two Mid Semester Test – Max Marks: 20	Assignment/Quiz/Attendance - Max. Marks: 10
Practical Internal Max Marks: Nil	Lab work & Session – Max Marks: Nil	Assignment / Quiz/Attendance - Max. Marks: Nil

Pre-Requisite	Fundamental knowledge of mathematics such as Algebra and Trigonometry.
Course Outcome	1. Experience mathematics outside of your regular course work.
	2. Use knowledge and skills necessary for immediate employment or acceptance into a graduate program.
	3. Maintain a core of mathematical and technical knowledge that is adaptable to changing technologies and provides a solid foundation for future learning.

Unit	Contents (Theory)	Marks Weightage
I	**Functions of Complex Variables :** Analytic functions, Harmonic Conjugate, Cauchy – Riemann Equations, Line integral, Cauchy's theorem, Cauchy's Integral formula, Singular points, Poles and Residues, Residue theorem and Evaluation of Real Integral	**14**
II	**Solution of Algebraic & Simultaneous Equations :** Solutions of algebraic and transcendental equations (Regula Falsi, Newton-Raphson, Iterative, Graffee's root squaring methods) and Solutions of simultaneous algebraic equations (Gauss Elimination, Gauss Jordan, Jacobi Iterative, ,Gauss Seidel and Crout's Traingularization).	**14**
III	**Numerical Analysis:** Difference operators, Errors and Approximations, Interpolation, Inverse interpolation, Numerical differentiation, Numerical Integration by using Simpson's method, Weddle's rule and Trapezoidal Rule.	**14**
IV	**Solution to Differential Equations:** Solutions of ordinary differential equations (Taylor's Series, Picard's Method, Euler's Method, Modified Euler's method, Runge Method and Runge Kutta Method).solve differential equation Milne's predictor and corrector method	**14**
V	**Concept of Probability:** Probability Mass function, Probability Density Function, Discrete Distribution: Binomial, Poisson's, Continuous Distribution: Normal Distribution, Exponential Distribution.Curve Fitting(method of least square)	**14**

Text Book/References Books/ Websites:

1. B.S. Grewal; Higher Engineering Mathematics; Khanna Publications
2. D.C. Aggarwal "Engineering Mathematics II
3. KV Suryanarayan Rao; Mathematical Methods; SCITECH Publication
4. J.H.Mathews and K.D.Fink; Numerical Methods using Matlab, P.H.I.
5. MKJain, Iyengar and RK Jain; Numerical Methods for Scientific and Engg. Computation, New Age International Publication
6. Yang ; Numerical Methods using Matlab, Wiley India
7. Ravichandran Pobability and Statistics by ,Wiley India
8. R George; Mathematical Statistics; Springer

Suggested List of Laboratory Practical (Expandable): Nil

PEOPLE'S UNIVERSITY, BHOPAL

(Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **B. Tech. (Mechanical Engineering)** **Semester –IV**

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External	Internal	Total (100)	External	Internal	Total
MET-1402	Production Process	3	1	-	(70)	(30)	Min: 40 (D Grade)	Nil	Nil	Nil

Duration of Theory (Externals): 3 Hours

Theory Internal- Max Marks: 30	Best of Two Mid Semester Test - Max Marks: 20	Assignment/Quiz/Attendance - Max. Marks: 10
Practical Internal Max Marks: Nil	Lab work & Sessional Max Marks: Nil	Assignment / Quiz/Attendance- Max. Marks: Nil

Pre-Requisite	Nil
Course Outcome	1. To understand the different process of production.
	2. To describe the process by which we improve the productivity.
	3. To understand the process of powder metallurgy.

Unit	Contents (Theory)	Marks Weightage
I	**Casting:** Introduction to Casting Processes, Basic Steps in Casting Process, Pattern, Types of Patterns, Pattern Allowances, Designing of Risers, Runners, Gates, Moulding Sand and its composition, Sand Preparation, Molding Methods, Core Sands and Core Making, Core Assembly, Mold Assembly, Melting (Cupola) and Pouring, Fettling, Casting Defects and Remedies.	**14**
II	**Cold Working** (Sheet Metal Work): Sheet Metal Operations, Measuring, Layout Marking, Shearing, Punching, Blanking, Piercing, Forming, spinning, thread rolling, Bending and Joining, Advantages and Limitations, defects.	**14**
III	**Hot Working Processes:** Introduction to Hot Working, Principles of Hot Working Processes, recrystallization, Forging, Rolling, Extrusion, and Wire Drawing, their types, advantages & limitations, defects etc.	**14**
IV	**Joining**: Introduction to Welding, Classification of Welding Processes, Gas Welding: Oxy-Acetylene Welding, Resistance Welding; Spot and Seam Welding, Arc Welding: Metal Arc, TIG & MIG Welding, Welding Defects and Remedies, Soldering & Brazing.	**14**
V	**Press Working:** Types of presses, selection of press, components of a simple press, press working Operations – shear, bending, drawing etc., types of dies, die sets, considerations in die design. **Jig and Fixtures:** introduction& their types, tool design, elements of jig and fixtures, design principles, design steps, locating and clamping devices. **Powder Metallurgy:** Preparation, properties, fabrications, applications, advantages, disadvantages.	**14**

Text Book/References Books/ Websites:

1. Steven R. Schmid ; Manufacturing Engineering Technology, Steven R Schmid and Other Publication.
2. S.P Nayak; Metallurgy for Engineering; McGraw Hill Publication Co.Ltd.
3. Dr. Abdul Mubeen ; Metallurgical Testing, Khanna Publication.
4. Hazara choudhary Workshop Technology- Vol-II; Media Promoters & Publishers Pvt. Ltd.
5. R.K.Jain; Production Technology,; Khanna Publications.

Suggested List of Laboratory Practical (Expandable): Nil

PEOPLE'S UNIVERSITY, BHOPAL

(Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **B. Tech. (Mechanical Engineering)** **Semester –IV**

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External (70)	Internal (30)	Total (100)	External (35)	Internal (15)	Total (50)
MET-1403	Theory of Machines-I (Kinematics)	3	1	1			Min: 40 (D Grade)			Min: 20 (D Grade)

Duration of Theory (Externals): 3 Hours

Theory Internal- Max Marks: 30	Best of Two Mid Semester Test – Max Marks: 20	Assignment/Quiz/Attendance- Max. Marks: 10
Practical Internal Max Marks: 15	Lab work & Sessional – Max Marks: 10	Assignment / Quiz/Attendance Max. Marks: 05

Pre-Requisite	Nil
Course Outcome	1. Able to understand the concept of various machine components and its mechanism
	2. Able to construct different types of cam profile for a given data.
	3. Study the various machines parts and its applications.

Unit	Contents (Theory)	Marks Weightage
I	**Mechanisms and Machines:** Mechanism, machine, plane and space mechanisms, link ,kinematic pairs, kinematic chains and their classification, degrees of freedom, Grumbler's criterion, kinematic inversions of four bar mechanism and slider crank mechanism, equivalent linkages, pantograph, straight line motion mechanisms, Davis and Ackermann's steering mechanisms, Hooke's joint. Numerical	**14**
II	**Kinematic analysis**: kinematic analysis of plane mechanisms using graphical method, Planar kinematics of a rigid body, rigid body motion, translation, rotation about a fixed axis, absolute general plane motion. General case of plane motion, relative velocity method, velocity and acceleration analysis, instantaneous center and its application, Kennedy's theorem, relative motion, Coriolis component of acceleration; Kliens construction, Mechanical Advantages. Numerical	**14**
III	**Gears:** Classification of gears, nomenclature, law of gearing, involutes and cycloid tooth profile properties, synthesis of tooth profile for spur gears, tooth system, conjugate action, velocity of sliding, arc of contact, path of contact, contact ratio, interference and undercutting, Backlash Error, helical, spiral, bevel and worm gears. **Gear Trains:** types of gear train; determination of gear speeds using analytical method; torque calculations in compound and epicyclic gear trains. Numerical	**14**
IV	**Cams:** Classification of followers and cams, terminology used in cam, analysis of follower motion (uniform, modified uniform, simple harmonic, parabolic, cycloidal), pressure angle, radius of curvature, synthesis of cam profile by graphical approach, cams with specified contours. Spring surge, unbalance and jump phenomenon. Numerical	**14**
V	**Friction:** Frictional torque in pivots and collars by uniform pressure and uniform wear rate criteria. Concept of friction circle and axis, rolling friction. Boundary and fluid film lubrication, friction in journal and thrust bearings, lubricants, their types and properties, **Belt and Chain Drives:** Methods of power transmission, flat belt and pulley; V-belts and sheave design; chain drives, roller chain . Numerical	**14**

Text Book/References Books/ Websites:

1. SS Rattan; Theory of machines; TMH
2. AG Ambekar; Mechanism and Machine Theory; PHI.
3. CS Sharma; Purohit K; Theory of Mechanism and Machines; PHI.

PEOPLE'S UNIVERSITY, BHOPAL

(Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **B. Tech. (Mechanical Engineering)** **Semester –IV**

4. Thomas Bevan; Theory of Machines; Pearson/ CBS PUB Delhi.
5. Ghosh and Mallick, theory of machine & mechanism
6. T. V. Ramachandra; Management of Municipal Solid Waste; TERI press.

Suggested List of Laboratory Practical (Expandable):

1. To study of inversion of single and double slider crank mechanism.
2. To study various types of kinematics links, pair, chains & mechanisms.
3. To study of simple four bar linkage mechanism
4. To study of various types of gears
5. To study of various types of gear trains.
6. To study of various types of Cam & follower arrangements.
7. To study of different types of belts.
8. To find the co-efficient of friction between wooden block and glass surface with horizontal surfaces.
9. To find the co-efficient of friction between wooden block and glass surface with inclined surfaces.

PEOPLE'S UNIVERSITY, BHOPAL

(Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **B. Tech. (Mechanical Engineering)** **Semester –IV**

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External	Internal	Total (100)	External	Internal	Total (50)
MET-1404	Thermal Engineering	3	1	1	(70)	(30)	Min: 40 (D Grade)	(35)	(15)	Min: 20 (D Grade)

Duration of Theory (Externals): 3 Hours

Theory Internal- Max Marks: 30	Best of Two Mid Semester Test – Max Marks: 20	Assignment/Quiz/Attendance- Max. Marks: 10
Practical Internal Max Marks: 15	Lab work & Sessional – Max Marks: 10	Assignment / Quiz/Attendance- Max. Marks: 05

Pre-Requisite	Basic knowledge of Thermal Engineering.
Course Outcome	1. Describe energy conversion in power plants.
	2. Identify elements and their functions Power Plants.
	3. Economics of power plant.

Unit	Contents (Theory)	Marks Weightage
I	**Power Cycles:** Carnot and Rankine vapour cycles, effect of operating conditions on thermal efficiency of Rankine cycle, Rankine cycle with superheat, reheat and regeneration, Brayton cycles Binary vapor cycle, Air standard Cycles used in I.C. engine.(Otto, Diesel, Dual) Numerical	**14**
II	**Steam Nozzles:** Steady flow energy equation and its application to steam nozzle, expansion of steam through convergent and divergent nozzles, critical pressure ratio, condition for maximum discharge, choking of nozzles, effect of back pressure, supersaturated flow through nozzles, flow with friction, nozzle efficiency, steam ejectors and injectors. Flow Through Nozzles: Velocity and heat drop, mass discharge through a nozzle, critical pressure ratio and its significance, effect of friction and nozzle efficiency, supersaturated flow, design pressure ratio, Problems. **Steam Condensers:** Elements of a condensing plant, types of condensers, comparison of jet and surface condensers. Condenser vacuum, sources of air leakage & its disadvantages, vacuum efficiency and condenser efficiency. Numerical	**14**
III	**Combustion in SI engines**: Flame development and propagation, ignition lag, effect of air density, temperature, engine speed, turbulence and ignition timings, physical and chemical aspects of detonation, effect of engine and fuel variables on knocking tendency, knock rating of volatile fuels, octane number, H.U.C.R., action of dopes, pre-ignition, its causes and remedy, salient features of various type combustion chambers, valve timing and firing order. Theory of carburetion (in brief).	**14**
IV	**Combustion in C.I. Engines**: Times base indicator diagrams and their study, various stages of combustion, delay period, diesel knock, octane number, knock inhibitors, salient features of various types of combustion chambers, fuel, ignition, cooling, exhaust and lubrication systems; Simple problems on fuel injection, various types of engines, their classification and salient features. Rotary I. C. engines, their principles of working. Fuel injection (in brief).	**14**
V	**Testing and Performance:** Performance parameters, Measurements of brake power, Indicated power, Friction power, Fuel and air consumption, Exhaust gas calorimeter, Calculation of various performance parameter, Heat balance sheet, Performance for S.I. and C.I. engine with load and speed.	**14**

PEOPLE'S UNIVERSITY, BHOPAL

(Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **B. Tech. (Mechanical Engineering)** **Semester –IV**

Text Book/References Books/ Websites:

1. A.Venkatesh ; Basic Engineering Thermodynamics, Universities Press.
2. P.K.Nag ; Basic and Applied Thermodynamics ; 2nd Ed., Tata McGrawHill Pub.
3. Arora and Domkundwar ; Thermodynamics; Dhanpat Rai Publication.
4. J.B.Jones and G.A.Hawkins ; Engineering Thermodynamics; John Wiley and Sons.
5. G.J.Van Wylen and R.E.Sonntag ; Fundamentals of Classical Thermodynamics; Wiley Eastern.
6. V Ganeshan ; Internal Combustion Engines; McGraw-Hill Education.
7. B.L.Singhal ; Internal Combustion Engines; McGraw-Hill Education.

Suggested List of Laboratory Practical (Expandable):

1. Study of working of four stroke petrol engine and four stroke diesel engine with the help of cut section models.
2. To calculate the indicated power, friction power and mechanical efficiency of four stroke four
3. cylinder petrol engine at full load and rated speed by Morse test
4. To determine the full load performance of 4stroke single cylinder spark ignition system.
5. To determine the part load performance of 4stroke single cylinder spark ignition system.
6. To determine the brake mean effective pressure of 4stroke single cylinder spark ignition system.
7. To determine the full load performance of 4stroke single cylinder compression ignition system.
8. To determine the part load performance of 4stroke single cylinder compression ignition system.
9. To prepare heat balance sheet on multi-cylinder diesel engine / petrol engine.
10. To study of the principle of Vapor power cycles.
11. To study of the different kind of steam condenser used in steam power plant.
12. To study of steam nozzles.

PEOPLE'S UNIVERSITY, BHOPAL

(Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **B. Tech. (Mechanical Engineering)** **Semester –IV**

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External (70)	Internal (30)	Total (100)	External (35)	Internal (15)	Total (50)
MET-1405	Fluid Mechanics	3	1	1			Min: 40 (D Grade)			Min: 20 (D Grade)

Duration of Theory (Externals): 3 Hours

Theory Internal- Max Marks: 30	Best of Two Mid Semester Test – Max Marks: 20	Assignment/Quiz/Attendance- Max. Marks: 10
Practical Internal Max Marks: 15	Lab work & Sessional – Max Marks: 10	Assignment / Quiz/Attendance Max. Marks: 05

Pre-Requisite	Nil
Course Outcome	1. To understand and apply the basic concepts of Fluid Mechanics.
	2. Apply scientific method strategies to fluid mechanics: analyze qualitatively and quantitatively the problem situation, propose hypotheses and solutions.
	3. Use specific vocabulary and terminology and the appropriate means to effectively communicate knowledge, procedures, results, skills and aspects inherent to fluid mechanics.

Unit	Contents (Theory)	Marks Weightage
I	**Review of Fluid Properties:** Fluid Types & their Properties, Fluid Statics :Pressure, Pascal's law, Hydrostatic law, Pressure Measurement, Hydrostatic Force on Submerged Plane and Curved Surface, Buoyant Force, Stability of Floating and Submerged Bodies, Relative Equilibrium. **Kinematics of Flow** : Types of Flow, one, Two And Three Dimensional Flow, Path Lines, Streak-Lines, Streamlines and Stream Tubes; Acceleration of a Fluid Particle, Motion of fluid Particle Along Curved Path, Normal and Tangential Acceleration, Rotational Flow, Rotation and Vortices, Circulation, Stream and Potential Function, Flow Net, Its characteristics and utilities, Vortex Motion, Continuity Equation for one and Three Dimensional Flow, Rotational & Irrotational Flow, Circulation, Stagnation Point, Separation of flow.	**14**
II	**Dynamics of Flow:** Euler's equation of Motion along a streamline and derivation of Bernoulli's Equation, Application of Bernoulli's equation, Energy Correction Factor, Linear Momentum Equation for Steady flow; Momentum Correction Factor. The moment of Momentum Equation, Forces on fixed and Moving Vanes and other applications. Fluid Measurements: Velocity Measurement, Flow Measurement.	**14**
III	**Dimensional Analysis** and Dynamic Similitude: Dimensional analysis, Rayleigh Method, Buckingham-pi theorem Model Analysis, Similarity Law , Dimensionless Numbers, Reynold's Model Law, Fraude's Model Law, Euler's Model Law, Weber's Model Law, Mach's Model law.	**14**
IV	**Flow through pipes:** Loss of energy in pipes, Hydraulic Gradient and Total Energy Line, Pipe in series and Parallel, Equivalent Pipe, Power Transmission Through Pipe, Water Hammer in pipes, Flow Through Siphon.	**14**
V	**Boundary Layer Flow:** Introduction to laminar & turbulent flow, boundary layer thickness, boundary layer theory, separation of boundary layer. Reynolds experiment & Reynolds number, relation between shear & pressure gradient, laminar flow through circular pipes, laminar Flow between parallel plates, Kinetic energy & momentum correction Factor, Stokes law.	**14**

PEOPLE'S UNIVERSITY, BHOPAL

(Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **B. Tech. (Mechanical Engineering)** **Semester –IV**

Text Book/References Books/ Websites:

1. Modi & Seth; Fluid Mechanics; Standard Book House, Delhi.
2. Streeter VL, Wylie EB, Bedford KW; Fluid Mechanics; TMH.
3. Som and Biswas; Fluid Mechnics and machinery; TMH.
4. Cengal; Fluid Mechanics; TMH.
5. White ; Fluid Mechanics ; TMH.
6. Gupta; Fluid Mechanics; Pearson.
7. Dr. D.S. Kumar fluid power engineering.
8. R. K. Bansal, Fluid Mechanics.
9. R Mohanty; Fluid Mechanics; PHI.

Suggested List of Laboratory Practical: (Expandable):

1. To determine the local point pressure with the help of pitot tube.
2. To find out the terminal velocity of a spherical body in water.
3. Calibration of Orifice meter and Venturi meter.
4. Determination of Cc, Cv, Cd of Orifices.
5. Calibration of Nozzle meter and Mouth Piece.
6. Reynolds experiment for demonstration of stream lines & turbulent flow.
7. Determination of meta-centric height.
8. Determination of Friction Factor of a pipe
9. To study the characteristics of a centrifugal pump.
10. Verification of Impulse momentum principle.

PEOPLE'S UNIVERSITY, BHOPAL

(Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **B. Tech. (Mechanical Engineering)** **Semester –IV**

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External	Internal	Total	External	Internal	Total (50)
MET-1406	Manufacturing Process Lab	-	-	1	(Nil)	(Nil)	Nil	(35)	(15)	Min: 20 (D Grade)

Duration of Theory (Externals): Nil

Theory Internal- Max Marks: Nil	Best of Two Mid Semester Test – Max Marks: Nil	Assignment/Quiz/Attendance Max. Marks: Nil
Practical Internal Max Marks: 15	Lab work & Sessional – Max Marks: 10	Assignment / Quiz/ Attendance Max. Marks: 05

Pre-Requisite	Nil
Course Outcome	1. Understanding the properties of moulding sands and pattern making
	2. Fabricate joints using gas welding and arc welding..
	3. Basic idea of press working tools and performs moulding studies on plastics

Unit	Contents (Theory)	Marks Weightage
I	**Metal Casting Lab:** Pattern Design and Making - for One Casting Drawing. , Sand Properties Testing - Exercise -for Strengths, and Permeability – Moulding Melting and Casting & Exercise. **Welding Lab:** ARC Welding Lap & Butt Joint & Exercises, Spot Welding & Exercise, TIG Welding & Exercise, Plasma welding and Brazing & Exercises (Water Plasma Device). **Mechanical Press Working:** Blanking & Piercing Operation and study of simple, compound and progressive press tool. Hydraulic Press: Deep drawing and extrusion operation, Bending and other operations. **Processing of Plastics:** Injection Moulding, Blow Moulding.	**50**

Text Book/References Books/ Websites:

1. Hazara Choudhary; Workshop Practices -, Vol. I & II.
2. R.K. Jain; Production Technology
3. H.S. Bawa; Workshop Practice, TMH
4. GK Mittal; Electrical Engineering material; Khanna Publication ,2011
5. G.H.F. Nayler ; Dictionary of Mechanical Engineering : Jaico Publishing House

Suggested List of Laboratory Experiments:- (Expandable):

1. To make an S-hook from a given round rod, by following hand forging operation.
2. To make a Square rod from a given round rod, by following hand forging operation.
3. To make a dovetail lap joint.
4. To make a cross half lap joint.
5. To make a Square fit from the given mid steel pieces.
6. To make a V-Fit from the given mid steel pieces.
7. To prepare a sand mold, using the given single piece pattern.
8. To prepare a sand mold, using the given Split-piece pattern.
9. To make a rectangular Tray as per required dimensions.
10. To make a cylindrical pipe as per required dimensions.

PEOPLE'S UNIVERSITY, BHOPAL

(Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **B. Tech. (Mechanical Engineering)** **Semester –IV**

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External	Internal	Total	External	Internal	Total (50)
BT-1407	Social Engineering	-	-	1	(Nil)	(Nil)	Nil	(Nil)	(50)	Min: 20 (D Grade)

Duration of Theory (Externals): Nil

Theory Internal- Max Marks: Nil	Best of Two Mid Semester Test – Max Marks: Nil	Assignment/Quiz/Attendance Max. Marks: Nil
Practical Internal Max Marks: 50	Lab work & Sessional – Max Marks: Nil	Assignment / Quiz/Attendance Max. Marks: 50

Pre-Requisite	Nil
Course Outcome	1. An outcome refers to psychological manipulation and human behavior of students into performing actions or divulging confidential information.

Unit	Contents (Theory)	Marks Weightage
	Social engineering is one of the most prolific and effective means of gaining access to secure systems and obtaining sensitive information yet requires minimal technical knowledge. Social engineering works by manipulating normal human behavioral traits and as such there are only limited technical solutions to guard against it. As a result, the best defense is to educate users on the techniques used by social engineers, and raising awareness as to how both humans and computer systems can be manipulated to create a false level of trust. This can be complemented by an organizational attitude towards security that promotes the sharing of concerns, enforces information security rules and supports users for adhering to them. Contents are as follows: Introduction of Social Engineering; Types; Psychology in Social Engineering; The Social Engineering Life Cycle; Human Behavior; Weapons of a Social Engineer; Defense against Social Engineering; Examples; Reverse Social Engineering.	**50**

Text Book/References Books/ Websites:

1. Kevin Mitnick; The book The Art Of Deception.
2. www.socialengineer.com/wpcontent/uploads/2017/02/AdvancedPracticalSocialEngineering-Syllabus.pdf.
3. www.youtube.com/watch?v=b-yqbNM3s7c&feature=related
4. **https://www.exploit-db.com/docs/english/18135-social-engineering---the-human-factor.pdf.**
5. **http://www.ittoday.info/AIMS/DSM/82-10-43.pdf**

Suggested List of Laboratory Experiments :- (Expandable):

Students should prepare a hand written report on social engineering as assigned by faculty.

PEOPLE'S UNIVERSITY, BHOPAL

(Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **B. Tech. (Mechanical Engineering)** **Semester –IV**

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External	Internal	Total	External	Internal	Total (50)
MET-1408	Electrical Workshop	-	-	1	(Nil)	(Nil)	Nil	(35)	(15)	Min: 20 (D Grade)

Duration of Theory (Externals): -Nil

Theory Internal- Max Marks: -Nil	Best of Two Mid Semester Test – Max Marks: -Nil	Assignment/Quiz/Attendance Max. Marks: -Nil
Practical Internal Max Marks: 15	Lab work & Sessional – Max Marks: 10	Assignment / Quiz/ Attendance Max. Marks: 05

Pre-Requisite	Nil
Course Outcome	1. Apply and deduce the principles of Electrical Measurements and Instrumentation Engineering through laboratory experimental work.
	2. Connect the circuit to perform experiments, measure, analyze the observed data to come to a conclusion.
	3. Measure resistance, inductance and capacitance using bridges

Unit	Contents (Theory)	Marks Weightage
	1. Miscellaneous Electrical Workshop Processes Acquaintance with the average tools and equipments used for electrical workshop. Soldering wire jointing of different types, Making of Extension board containing two 5A and one 15A plug-points, Soldering electrical elements with the necessary switches micro-switches and extension terminals. 2. House Wiring Processes Wiring of different lamp control, stair casing circuits, batton wiring, Cleat wiring and conduit wiring Assembly and interchange wiring of fluorescent tube light, Connection of table and ceiling fans with regulators, Earth resistance measurement and earthling processes. 3. Distribution Boards Processes To make a distribution board containing at least two switches, one fan regulator and one 5A plug point energy meter with main switch, To make a single phase main distribution board with five outgoing circuits for light and fan load including main switch and fuses (only internal connections), Wiring and testing of alarm and indicating relays, indicating lights etc, Dismantling, repairing, assembling and testing of domestic appliance like electric iron, room heater, electric toaster, water heater, electric kettle, electric oven, ceiling fan, Table Fan, regulators, alarm bell, Coil winding for small transformers or alarm bell, Assembling small transformer cores from the given lamination plates. Assembling small battery charger Armature Winding Armature winding of car dynamo, Armature winding of table fan, Armature winding of ceiling fan. Armature winding of 3 phase induction motor.	**50**

Text Book/References Books/ Websites: Nil

Suggested List of Laboratory Experiments:- (Expandable):

Students should prepare atleast ten sheets.