

PETROLEUM TECHNOLOGY (B.Tech + MBA Integrated)

III Semester Petroleum Technology

Subject Code	Name of Subject	Teaching Periods			Credit Points
		L	T	P	
03BPE101	Mechanics of solids	3	1	0	4
03BPE102	Theory of machines	3	1	0	4
03BPE103	Mathematics III	3	1	0	4
03BPE104	Geology for petroleum engineers	3	1	0	4
03BPE105	Drilling fluids & cements	3	1	0	4
03BPE106	Fluid Mechanics	3	1	0	4
03BPE201	Petroleum engineering Lab 1 (Drilling fluids lab)	0	0	2	1
03BPE202	Geology for petroleum engineers Lab	0	0	2	1
03BPE203	Thermal Lab I	0	0	2	1
03BPE204	Fluid Mechanics Lab	0	0	2	1
03BPE301	Discipline & Co-Curricular Activities	0	0	4	1
Total		18	6	12	29

IV Semester Petroleum Technology

Subject Code	Name of Subject	Teaching Period			Credit Points
		L	T	P	
04BPE101	Elements of production engineering	4	0	0	4
04BPE102	Elements of Reservoirs engineering	4	0	0	4
04BPE103	Drilling Technology	4	0	0	4
04BPE104	Env. aspects in oils & allied industries	3	1	0	4
04BPE105	Numerical & Statistical methods	4	0	0	4
04BPE106	Surveying	4	0	0	4
04BPE201	Petroleum engineering Lab-II	0	0	2	1
04BPE202	Transducer & measurement Lab	0	0	2	1
04BPE203	Surveying Lab I	0	0	2	1
04BPE204	Thermal Lab II	0	0	2	1
04BPE301	Discipline & Co-Curricular Activities	0	0	4	1
Total		23	1	12	29

V Semester Petroleum Technology

Subject Code	Name of Subject	Teaching Period			Credit Points
		L	T	P	
05BPE101	Thermodynamics of petroleum reservoir fluids	4	0	0	4
05BPE102	Petroleum prod. operation & Env Management	4	0	0	4
05BPE103	Applied electrical engineering	4	0	0	4
05BPE104	Sedimentary& petroleum geology	3	1	0	4
05BPE105	Fluidization Engineering	3	1	0	4
05BPE106	Petroleum and its Products	3	1	0	4
05BPE201	CAD Lab	0	0	2	1
05BPE202	Sedimentary & petroleum geology Lab	0	0	2	1
05BPE203	Production Lab	0	0	2	1
05BPE204	Surveying Lab II	0	0	2	1
05BPE301	Discipline & Co- Curricular Activities	0	0	4	1
	Total	21	3	12	29

VI Semester Petroleum Technology

Subject Code	Name of Subject	Teaching Period			Credit points
		L	T	P	
06BPE101	Drilling sys. design & Directional Drilling	3	1	0	4
06BPE102	Petroleum formation Evaluation	3	1	0	4
06BPE103	Natural gas engineering	3	1	0	4
06BPE104	Internal Combustion Engines	3	1	0	4
06BPE105	OOP & advanced Numerical methods	3	1	0	4
06BPE106	Petroleum Refining and Petrochemicals	4	0	0	4
06BPE201	Petroleum Engineering Lab – III (Process Engineering Lab)	0	0	2	1
06BPE202	OOP & Advanced Numerical Lab	0	0	2	1
06BPE203	Production Practice Lab	0	0	2	1
06BPE204	Propulsion Lab	0	0	2	1
06BPE301	Discipline & Co- Curricular Activities	0	0	4	1
	Total	19	5	12	29

VII Semester Petroleum Technology

Subject code	Name of subject	Teaching Periods			Credit Points
		L	T	P	
07BPE101	Petroleum Engineering design	3	1	0	4
07BPE102	Onshore & Offshore Drilling	3	1	0	4
07BPE103	Instrumentation & Control	3	1	0	4
07BPE104	Petro. exploration Surveying methods	3	1	0	4
07BPE105	Petro. exploration Geological	3	1	0	4
07BPE106	Packaging Oils-Fats & Allied Products	3	1	0	4
07BMD101	Principles and Practice of Management	3	0	0	3
07BMD102	Managerial Economics	3	0	0	3
07 BMD103	International Business Management	3	0	0	3
07BPE201	Minor project	0	0	2	1
07BPE202	Instrumentation and control Lab	0	0	2	1
07BPE203	Kinematics of Machines Lab	0	0	2	1
07BPE204	Industrial Training	0	0	2	1
07BPE301	Discipline & Co- Curricular Activities	0	0	4	1
	Total	18	6	12	38

VIII Semester Petroleum Technology

Subject Code	Name of Subject	Teaching Period			Credit Points
		L	T	P	
08BPE101	Applied petroleum reser. Engg. &management	3	0	0	3
08BPE102	Surface operation for oil & gas production	3	1	0	4
08BPE103	Oil-gas well testing &Enhanced oil recovery	3	1	0	4
08BPE104	Pipeline Engineering	3	0	0	3
08BMD101	Human Resource Management	3	0	0	3
08BMD102	Marketing Management	3	0	0	3
08BMD103	Financial Management	3	0	0	3
08BMD104	Management Information system	3	0	0	3
08BPE201	Major Project	5	0	0	5
08BPE202	Seminar	3	0	0	3
08BPE203	Structures Laboratory	0	0	2	1
08BPE301	Discipline & Co- Curricular Activities	0	0	4	1
	Total	26	2	6	42

IX Semester Petroleum Technology

Subject Code		Name of Subject	Teaching Period			Credits
			L	T	P	
Compulsory Papers						
09BMD101		Business Policy & strategic Management	4	0	0	4
09BMD102		Operation & Product Management	4	0	0	4
09BMD103		Research Methods in Management	4	0	0	4
09BMD104		Summer Training & Project Management	3	0	0	3
Optional Papers (Major)-V						
(Finance)	09BMD105	International Financial Management	4	1	0	4
(Marketing)	09BMD106	International Marketing	4	1	0	5
(Human Resource)	09BMD107	Strategic Human Resource Management	4	1	0	5
Optional Papers (Major)-VI						
(Finance)	09BMD108	Investment Management & Security Analysis	4	1	0	5
Marketing)	09BMD109	Advertisement Management	4	1	0	5
Human Resource)	09BMD110	Training & development	4	1	0	5
Optional Paper (Minor) VII 1st paper of other two group (Not of Major Group selected)			4	0	0	5
09BMD301		Discipline & Extra Curricular Activities	0	0	0	1
			30	0	0	30

NOTE:-

- In IX Semester student has to study all compulsory paper, two major optional paper & one minor paper)
- Optional minor papers (Marketing/H.R./ Finance) will be Ist paper of other two group. (Not of Major Group selected)
- Major paper could be obtain from any group (i.e. a group A/B/C)
- A student has to select minor paper from the group A/B/C for the respective semester.

X Semester Petroleum Technology

Subject Code	Name of Subject	Teaching Period			Credits
		L	T	P	
Compulsory Paper					
10 BMD101	Social Responsibility & Business Ethics & Law	4	0	0	4
10 BMD102	Project Management	4	0	0	4
Major Optional Paper III					
10 BMD103(Finance) 10 BMD104(Marketing) 10 BMD105(Human Resource)	Management of Financial Services Sales & Distribution Management Leadership Skill & Change Management	4	1	0	5
Major Optional Paper IV					
10 BMD106(Finance) 10 BMD107(Marketing) 10 BMD108(Human Resource)	Finance For Strategic Decisions Product & Brand Management Human Resource Planning	4	1	0	5
Major Optional Paper V					
10 BMD109(Finance) 10 BMD110(Marketing) 10 BMD111(Human Resource)	Banking Services & Operation Marketing of Services Performance Management & Retention Strategies	4	1	0	5
Optional Minor Paper Ist paper of other two group (Not of Major Group selected)		4	1	0	5
10BMD301	Discipline & Extra Curricular Activities	0	0	2	1
Total		24	4	2	29

Note

- In X semester student has to study two compulsory papers, three major optional papers, and one minor paper.
- Optional Minor paper (Marketing/H.R./Finance) will be Ist paper of other two group (Not of Major Group selected)

**III Semester Petroleum Technology
03BPE-101**

MECHANIC OF SOLIDS

Course/Paper: 03 BPE -101

BPE Semester-III

Unit – 1 Stress & strain: Tension, compression, shearing stress & strain; Poisson's ratio: Stress-strain relationship, Hooke's law; equations of static = w for 2D & 3D cases Elastic constants and their relations for an isotropic Hookean material, anisotropy & orthotropy, thermal stresses, composite bars; simple elastic, plastic & visco-elastic behavior of common materials in tension and compression test, stress- strain curves. Concept of factor of safety & permissible stress. Conditions for equilibrium. Concept of free body diagram; Introduction to mechanics of deformable bodies.

Unit – 2 Members subjected to flexural loads: Theory of simple bending, bending moment and shear force diagrams for different types of static loading and support conditions on beams. Bending stresses, Section modulus and transverse shear stress distribution in circular, hollow circular, I, Box, T, angle sections etc.

Unit – 3 Principal planes, stresses & strains: Members subjected to combined axial, bending & Torsional loads, maximum normal & shear stresses; Concept of equivalent bending & equivalent twisting moments: Mohr's circle of stress & strain. Theories of Elastic Failures: The necessity for a theory, different theories, significance and comparison, applications.

Unit – 4 Torsion: Torsional shear stress in solid, hollow and stepped circular shafts, angular deflection and power transmission capacity. Stability of equilibrium: Instability & elastic stability. Long & short columns, ideal strut, Euler's formula for crippling load for columns of different ends, concept of equivalent length, eccentric loading, Rankine formulae and other empirical relations.

Unit – 5 Transverse deflection of beams: Relation between deflection, bending moment, shear force and load, Transverse deflection of beams and shaft under static loading, area moment method, direct integration method: method of superposition and conjugate beam method. Variation approach to determine deflection and stresses in beam. Elastic strain energy: Strain energy due to axial, bending and Torsional loads; stresses due to suddenly applied loads; use of energy theorems to determine deflections of beams and twist of shafts. Castigliano's theorem. Maxwell's theorem of reciprocal deflections.

References

1. Strength of Materials : B.C Poonamia and ramamurtham, Dhanpatrai Publishers Delhi
2. Mechanics of solid : S.H.Crandell, N.C.Dahi and T.J. Lardner, Mc Graw Hill International Edition
3. Strength of Materials: G.H. Ryder, ELBS Publications co ltd
4. Elements of Strength of Material :J.P. Tinnoshnko and G.H.Young, Affiliated East west Press New Delhi
5. Solid Mechanic : GMA Kazmi, Tata Mc-Graw Hill Publishing Ltd., New Delhi Mc Graw Hill Publishing co Ltd New Delhi

03 BPE -102

THEORY OF MACHINES

Course/Paper: 03 BPE -102

BPE Semester-III

UNIT – 1 Kinematics: Elements, pairs, mechanisms, four bar chain and its inversions, velocity and acceleration, Klein's construction, coriolis component, instantaneous center method, synthesis of mechanisms, panto graph, scott-Russel, Tchbeicheff straight line, indicator diagram mechanisms.

UNIT – 2 Automotive vehicle mechanisms: Overhead valve mechanism, Davis and Ackerman steering mechanism, Trifler suspension and Hooks joint. Power transmission: Belts and ropes, effect of centrifugal force, creep, chain drive.

UNIT – 3 Friction: Laws of static, dynamic and rolling friction, dry and viscous friction, inclined plane and screw jack, pivots and friction axis, bearing, Clutches. Theory of film lubrication.

UNIT – 4 Brakes and dynamometers: Band, block and band & block brakes, braking action, absorption and transmission type dynamometers, prony, rope and hydraulic dynamometers braking system of automobiles.

UNIT – 5 Cams: Type of cams, displacement, velocity and acceleration curves for different cam followers, consideration of pressure angle and wear, analysis of motion of followers for cams with specified contours

References

1. The Theory of Machines : Thoman Beaven ,CBS Publishers & Distributor New Delhi

2. Theory of Mechanisms and Machines : Jagdish Lal ,Metropolitan Book Co Ltd New Delhi
3. Theory of Machines : P.L. Ballaney, Khanna Publishers New Delhi
4. Theory of Mechanisms and Machines: A. Gosh and A.K .Malik , Affiliated East West Press Pvt Ltd New Delhi
5. Theory of Machine and Mechanics: J.K. Shigley & J.J. Ulcker, Mc graw Hill International Edition
6. Kinetics and Dynamics of Machines: G.H. Martin, McGraw Hill publishers

03 BPE -103

MATHEMATICS - III

Course/Paper: 03 BPE -103

BPE Semester-III

UNIT -1 LAPLACE TRANSFORM - Laplace transform with its simple properties, applications to the solution of ordinary and partial differential equations having constant co-efficient with special reference to the wave and diffusion equations.

UNIT -2 Classification of partial differential equation. Linear partial differential equation of higher order with constant coefficients, Charpit's method Monges Method

UNIT -3 Bessel's functions of first & second kinds, simple recurrence relations, Orthogonal property of Bessel's transformation, Generating functions Legendre's function of first kind, simple recurrence relation orthogonal property,, Generating function.

UNIT -4 COMPLEX VARIABLES - Analytic functions, Cauchy-Riemann equations, Elementary conformal mapping with simple applications, Line integral in complex domain, Cauchy's theorem. Cauchy's integral formula.

UNIT- 5 COMPLEX VARIABLES -Taylor's series Laurent's series poles, Residues, Evaluation of simple definite real integrals using the theorem of residues. Simple contour integration.

References

1. Engg Mathematics III Mangal Maheswari ,Dhanpat Rai & co Delhi
2. Engg Mathematics IV Mangal Maheswari ,Dhanpat Rai & co Delhi
3. Differential Calculas: M.D.Raisinghanian
4. Engg Mathematics III Dr okharoo & others ,Unique Books Ajmer

03 BPE -104

GEOLOGY FOR PETROLEUM ENGINEERS

Course/Paper: 03 BPE -104

BPE Semester-III

UNIT -1Introduction: Sub division &Importance of geology in petroleum engg., importance structure of the earth, Environment aspects of geology.

UNIT- 2 Petrology: origin, classification, texture and structure of igneous, sedimentary and metamorphic rocks, engineering properties of rocks.

UNIT -3 Structural geology: causes and classifications of faults, folds, joints and unconformities.

UNIT 4: Engineering geology: Geological investigation for site selection of tunnels, deep wells, reservoirs and mines. Site improvement techniques.

UNIT- 5 Economic geology: Introduction, variety of course, building stones, salt deposits, fuels and industrial minerals

References

1. Geology : Parbin Singh, Katson Publishers
2. Engg Geology : H.K.Dass
3. Geology : Shailee
4. Geology of Petroleum---- A.L.Leverson
5. Petroleum Geology----F.K.North
6. Introduction to Petroleum Geology----- G.D. Hobson & E.L. Tiratsoo
7. Petroleum Geology----R.E.Chapman
8. Principles of Petroleum Geology W.L. Russle
9. Structural Geology for Petroleum---Russell and Badgley
10. Geology of Petroleum : A.L.leversson

11. Introduction to Petroleum Engineering by Geltin

03 BPE -105

DRILLING FLUIDS AND CEMENTS

Course/Paper: 03 BPE -105

BPE Semester-III

UNIT -1 Drilling: Introduction, objectives of drilling, Site selection for drilling,

UNIT -2 Drilling Fluids: Types, functions, Testing of drilling Fluids ,selection and maintenance of drilling fluids, Composition and invasion of drilling fluids.

UNIT- 3 Cements: types of cements, classification of cement, composition of cement, test of cement, additive and cement slurry.

UNIT- 4 Cementing: objective, equipments used in cementing, slurry design for cementing, various techniques of cementing.

UNIT -5 lifts: types of lifts, objectives, pumping system, ESP, gas lift, progressive cavity pumps, PCP rod pumps.

References

1. Oil well drilling Engineering ,Principles & Practices :Rabia H , Graham and Totmanltd 1985
2. Cementing : Smith P K ,SPE Publications 1984
3. Cementing Technology : Powel Schlumberger Publication 1984
4. Reference Book
5. Drilling Fluids Processing Handbook The Shale Shaker Committee of the American Society of Mechanical Engineers, Publisher: Gulf Professional Publishing
6. Oil well Drilling Technology: Mc Craycole ,Oscar Publication

03 BPE -106:

FLUID MECHANICS

Course/Paper: 03 BPE -106

BPE Semester-III

UNIT - 1Basic Definitions and Fluid Properties ; Definition of Fluid, Incompressible and compressible fluids, Fluid as a continuum, Mass, Density, specific weight, relative density, specific volume, Bulk modulus, velocity of sound Ideal fluid Viscosity. Newtonian and Non -

Newtonian fluid, Kinematic viscosity, Effect of temperature and pressure on viscosity, surface tension capillarity, vapour pressure and cavitations.

Fluid Static's : General differential equation, Hydrostatics Manometry, Fluid forces on submerged surfaces. Curved surfaces, Aerostatics, Isothermal atmosphere, polytropic atmosphere. The international standard atmosphere, static stability The international standard atmosphere submerged bodies. Floating bodies.

UNIT - 2Kinematics and conservation of Mass : Flow classifications. Fluid velocity and acceleration, streamlines and the stream function. Pathlines and streak lines. Deformation of a fluid element, vorticity and circulation. Irrotational and Rotational flow. Flownet, Laplace equation. Conservation of mass and the continuity equation for three dimensions.

Fluid Momentum : The Momentum theorem Applications of the momentum theorem Equation of motion, Euler's equation of motion Integration of Euler's equation of motion. Bernoulli's equation. Applications of Bernoulli's Pitot tube, Equation of motion for Viscous fluid, Navier Stoke's equation.

UNIT - 3Orifice discharging free, Jet, vena contracts, co-efficient of contraction, velocity and discharge, coefficient of resistance. Orifices and mouthpieces Nozzles and weirs. Flow Through PBMDs : Reynold's experiment Darcy's Weisback equation. Loss of head due to sudden enlargements, contraction, entrance, exit obstruction, bend, pBMD fittings. Total and Hydraulic gradient lines, Flow through pBMD line. PBMDs in series, parallel Transmission of power through pBMDs.

UNIT - 4Laminar Flow: Simple solution of Navier Stokes equations. Hagen – Poiseuille flow. Plans Poiseuille flow and couette flow.Turbulent Flow; Variation of friction factor with Reynold's number. The Prandtl Mixing length hypothesis applied to pBMD flow, velocity distribution in smooth pBMDs, sough pBMDs. The Universal pBMD friction laws, Colebrook. White formula.

Dimensional Analysis: Buckingham variables, Model Similitude, Force ratio, Reynolds, Froude's Mach, Weber and Euler numbers and their applications. Undistorted model distorted model scale effect.

UNIT - 5 The Boundary Layer: Description of the boundary layer. Boundary Layer thickness boundary layer separation and control. The Prandtl boundary layer equation. Solution for cominar boundary layer. The momentum equation for the boundary layer. The flat plate in uniform free stream with no pressures gradients. Approximate momentum analysis laminar boundary

Aerofoil Theory. Flow round a body; Drag skin friction drag, pressure drag, combined skin friction & pressure drag (Profile drag) wave drag, lift induced drag. Flow past sphere & Cylinder

References

1. Engineering Fluid Mechanics : K.L.Kumar, Eurasia Publishing House Pvt Ltd
2. Fluid Mechanics and Machines : F.M. White ,John Wiley & Sons
3. Fluid Mechanics and Machines: A.K. Jain
4. Fluid Mechanics: V.L. Streeter, Mc Graw Hill
5. Fluid Mechanics and Hydraulic Machines: R.K. Bansal, Laxmi Publication New Delhi
6. Fluid Mechanics With Applications : S.K.Gupta V.Gupta, New Age Publications
7. Fluid Mechanics for Chemical engineers : Noel de Nevers ,Mc Graw HillIII Edition 1991
8. Fluid mechanics for chemical engineers: James O wikes and Stacy G Bikes, Prentice Hall PTR (International seriesin chemical engineering)1999

PRACTICAL

03BPE -201

PETROLEUM ENGINEERING PRACTICAL 1

Course/Paper: 03 BPE -201

BPE Semester-III

Measurement & control of the basic Property of Drilling Fluids(density ,Viscosity ,Filtration Lubricity & Electrochemical Properties)and cement slurries(Density, Viscosity, Filtration ,Thickening time.)

1. Testing methods of refinery products—Volatility, Viscosity ,Melting Point, Oxidation, Combustion, Corrosion Ash ,Carbon Residue ,Density & Sp. Gravity ,Gas Chromatography ,Saponification Value of oil ,P H Test
2. General processing& crude distillation
3. Cementing techniques
4. Drilling practices
5. Drilling technology operations

03BPE -202

GEOLOGY FOR PETROLEUM ENGINEERS PRACTICAL

Course/Paper: 03 BPE -202

BPE Semester-III

1. Normal Consistency of cement
2. Initial & final setting time of cement
3. Compressive strength of cement
4. Fineness of cement by air permeability and Le-chatalier's apparatus.
5. Soundness of cement.
6. Tensile strength.

II. Coarse Aggregate:

1. Crushing value of aggregate
2. Impact value of aggregate
3. Water absorption of aggregate
4. Sieve Analysis of aggregate
5. Specific gravity, bulk density
6. Grading of aggregates.

III. Fine Aggregate:

1. Sieve analysis of sand

2. Silt content of sand
3. Bulking of sand

IV. Lime:

1. Fineness of lime
2. Setting time and soundness of lime.
- V. Physical and mechanical properties of reinforcing steel.

VI. Bricks:

1. Water absorption
2. Dimension Tolerance
3. Compressive Strength
4. Efflorescence.

VII. Geology:

1. Megascopic study of minerals (physical properties and identification).
2. Determination of Specific Gravity of minerals.
3. Megascopic study of the following rocks with special reference to their suitability in Civil Engineering works
 - (a) Igneous rocks
 - (b) Sedimentary rocks
 - (c) Metamorphic rocks
4. Determination of strike and dip & completion of outcrop.
5. Preparation of geological section and study of geological maps with emphasis on the site Selection for dams, tunnels and highways.

03BPE- 203

THERMAL ENGINEERING LAB. I

Course/Paper: 03 BPE -203

BPE Semester-III

Group I:

1. Comparative study of 4 - stroke Petrol and Diesel Engines
2. Comparative study of 2 - stroke Petrol and Diesel Engines
3. Study of fuel supply system for Petrol engines
4. Study of fuel supply system for Diesel engines
5. Study of Cooling, lubrication and ignition system in diesel and petrol engines

Group - II:

1. Study of various types of Boilers
2. Study of various boiler accessories and mountings
3. Study of various types of Dynamometers
4. Study of Multi usage Compressor and perform load test

Group - III:

1. To determine B.H.P. and brake thermal efficiency of a 4 - stroke diesel engine
2. Study of vapor compression refrigeration system and to find out actual C.O.P. of the system
3. To determine the volumetric composition of exhaust gases and to determine the specific heats and gas constant of the mixture.

03BPE-204

FLUID MECHANICS LAB

Course/Paper: 03 BPE -204

BPE Semester-III

1. Determine Metacentric height of a given body.
2. Determine Cd. Cv & for given orifice
3. Determine flow rate of water by V-notch.
4. Determine velocity of water by pitot tube.
5. Verify Bernoulli's theorem.
6. Determine flow rate of air by Venturi meter.
7. Determine flow rate of air by orifice meter.

8. Determine head loss of given length of pBMD
9. Determine flow rate of air by nozzle meter.
10. Study of Pelton, Kaplan Turbine models.

IV Semester Petroleum Technology

04 BPE -101

ELEMENTS OF PRODUCTION ENGINEERING

Course/Paper: 04 BPE -101

BPE Semester-IV

Well completion, Well equipment, Drill Stem Tests, Vertical Lift Performance, Design & analysis of artificial methods of Petroleum Production. Field development, Processing in oil fields, Introduction to well servicing and stimulation system, Principles of refining process, Natural gas processing and . Introduction to petrochemicals. Value added products from fossil fuels. Flow measurement system, Liquid level controllers ,Emulsion Problems ,oil emulsions ,Emulsifying agents and demulsifies oil storage & tank farms, gauging & sampling ,quality control ,Underground storage system ,Water disposal ,corrosion, Water injection Systems ,Subsurface equipments

References

1. Gas Production Engineering : S.Kumar-Gulf Publishing co,1987
2. Principles of Well Production : T.E.W .Nind ,Mc .Graw hill book Co Ltd New York 1981,ISBN 0070465762
3. Production Operations :: T.O. Alen and A.P. Roberts , SPE volume 14 edition

04 BPE -102

ELEMENTS OF RESERVOIRS ENGINEERING

Course/Paper: 04 BPE -102

BPE Semester-IV

UNIT – 1 Fluid characteristics. Introduction to the production system. Characteristics of the reservoir rocks. Porosity, Flow of Fluids through Porous Media Permeability cross plots. Fluid saturation, capillary pressure. Reservoir Pressure Measurements and Significance, . PVT properties and application
 UNIT – 2 Multi phase flow: Relative permeability: fractional flow. Well performance – inflow performance, tubing performance., Reserve estimation
 UNIT – 3 Well testing – Basic well testing theory – oil well testing: gas well testing – Practical well testing – Gas field reservoir engineering – Fluid phase behaviour – Gas in place volumes and recovery estimations. Reservoir testing and performance analysis: well test – drill stem tests (DST); production tests, pressure tests on gas wells; formation interval testing and other well testing techniques. Coning of water and gas; effects of partial penetration.
 UNIT – 4 Material balance techniques: Production forecasting – Gas condensate reservoir engineering Fluid phase behaviour development – options.
 UNIT – 5 Well performance – Reservoir management and simulation – reservoir data acquisition – Reservoir simulation. Mathematical basis of bottom hole analysis; Differential equations for radial flow in a porous medium. Pressure draw down and build up analysis

References

1. Fundamental of Reservoir Engg by L.P Dake
2. Petroleum Reservoir Engg by Amyx, McGraw Hill 1998
3. Reservoir Engg by Dandekar
4. Applied Petroleum Reservoir Engineering ,Craft B.C and Hawkins M.F , Prentice Hall Engle wood cliffs,N J 1991
5. Practice of Reservoir Engineering :Dake L P ,Elsevier 2001
6. Standered Hand Book of Petroleum & Natural Gas engineering ,William C Lyons ,J Plisga, Gulf Publishing Burlington USA 2005

04 BPE -103

DRILLING TECHNOLOGY

Course/Paper: 04 BPE -103

BPE Semester-IV

UNIT – 1 Drilling operations – Location to Rig. Release Well Bore Diagram, Crews – Operator – Drilling, contractor – Third Party Services – Rig Types – Land Types – Marine types

UNIT – 2 Components- Overall Drilling Rig, Drilling Sub systems – Power – Hoisting Line – speeds and Loads Power – Loading Components – Drill PBMD, Heavy Weight Drill PBMD (HWDP), Drill String Loads Uniaxial.

UNIT – 3 Directional Drilling, Well Planning, Two Dimensional, Horizontal, Tools, Techniques, MWD, surveying – Radius of Curvature, Long’s Method – Errors, Muds, Mud Use, Property measurements, Types, - Pneumatic (Air, Gas, Mist, Foam), Water based, Oil based, solids Control, Definitions, Equipment, Problems, Contaminations Effect.

UNIT – 4 Hydraulics, Classifications of Fluids, Rheological Models – Rotary Drilling Hydraulics – Jet Hydraulic Optimizing and Maximizing – Circulations Rate Selection – Drill Bit – Jet Sizing – Equivalent Circulations Density, Hole Cleaning. Theory – Vertical and Deviated Holes, Annular Velocities – Carrying Capacity – Pills and Slugs.

UNIT – 5 Origin of Overpressure, Kick Signs, shut –in Procedures, Kill sheets, Kill Procedures, Driller’s Methods – Engineer’s Method (Wait and Weight)

References

1. ‘Oil Well Drilling Engineering, Principles And Practices’: Rabia.H. , Graham And Trotman Ltd. 1985.
2. ‘Fundamentals Of Formation Evaluation’: D.P Helander
3. Applied Drilling Engineering: SPE Text Book series vol-2
4. Drilling and Well completion : Carl Gatlin
5. Petroleum Engineering ,Drilling and well Completion: Gatlin C ,Prentice Hall Inc1960
6. Standard Handbook of Petroleum and Natural Gas Engineering, 2nd Edition, William C Lyons, Gary C Pilisga, Gulf Professional Publishing.
7. Drilling Engineering : Neal J.Addmas , Penwell

04BPE-104

ENVIRONMENTAL ASPECTS IN OIL AND ALLIED INDUSTRIES

Course/Paper: 04 BPE -104

BPE Semester-IV

Industrial pollution and its impact. Magnitude of industrial waste, Legislative regulations. Recycle and reuse of, waste water , recovery of by/c0- product from industrial effluents. Philosophy of waste treatment, scope of air and water pollution problems, economic considerations of waste disposal, separation and segregation of wastes, gaseous, liquid and solid waste disposal with special reference to oils and allied, product processing. Waste Management Pollution prevention and environment Management system ISO 14000. Waste audit, Quality, management systems, Different regulation means & acts for air, water& solid pollution control.

WASTE LIQUID TREATMENT:

Pretreatment methods, centrifugation filtration, evaporator and concentrator, extraction and distillation, treatment of, dilute wastewater. Treatment

requirements, Neutralization liquid-solid separation, biological oxidation, plant control, programme, absorption, liquid phase system, reclamation of waste water effluent and by-product recovery, ion exchange system, acid and alkali purification, continuous ion-exchange,. Case studies on vegetable oil processing, soaps and detergents.

WASTE GAS TREATMENT:

Air pollution control by mechanical method: mechanical collectors, electrostatic precipitator, filters, wet scrubbers, vapour phase system, activated

carbon. Typical

air purification

system.

References

1. Gilbert.M.Masters, ‘Introduction to Environmental Engineering and Science, 2nd Edition Pearson Education 2004.
2. T.G.Miller, ‘Environmental Science’ Wads Worth publishing Co.
3. C.Townsend.J.Harper and Michael Bgon, ‘Essentials of Ecology’ Blackwell Science.
4. R.K.Trivedi and P.K. Goel’ Introduction to Air pollution Techno science publications.
5. Bharuche Evach, ‘The Biodiversity of India’ Mapin Publishing Limited, Ahmedabad, India.
6. ‘R.K. Trivedi’ handbook of Environmental laws, Rules, Guidelines, Compliances and Standards, Vol I and II, Enviromedia.

- Cunningham.W.P.Cooper, T.H.Gorhani, Enviromental Encyclopedia. Jaico Publication House, Mumbai.

04 BPE - 105

NUMERICAL AND STATISTICAL METHODS

Course/Paper: 04 BPE -105

BPE Semester-IV

Unit -1 Forward, backward , central and Divided differences,

Newton's formula of interpolation for equal and unequal intervals. Lagrange's interpolation formula, Stirling's and Bessell's formula,

Unit -2 Solutions of systems of equations (Gauss elimination, Gauss Jordan, and Partition method for linear system of equations, power method for partition, method for linear system of equations, power method for finding eigen values),

Unit- 3 Numerical differentiation, Numerical Integration:- Trapezoidal, Simpson's rule and Gaussian integration (only formula applications) Differential equations and their solutions. Numerical methods for ordinary differential equations (Picard method, Taylor series method, Euler's method, Ranga Kutta Method, Predictor- corrector method, Adams- Bashforth method).

Unit- 4 Sampling theory: Introduction: Moments, Moment generating functions, Skewness, Kurtosis, Correlation and Regression, Normal sampling distributions; Binomial distribution, Poisson distribution, Normal distribution; Sampling distribution of the means; sampling distribution of the differences of the means; sampling distributions of proportions.

Unit- 5 Tests of Significance; t-distributions, chi square distributions, F-distributions.

Regression And Correlation; Linear regression; correlation, multiple correlation & partial correlation Confidence Limits; Large samples, small samples, error bands in regression

Reference

Numerical Methods and Applied Statistics : Nupur Srivastva,Dr Anita Bhagora Dr Vivek Kumar Sharma—
Geneous Publication Jaipur

Numerical Methods and Applied Statistics: Gokharoo, Jain ,Pareekh –Unique Publication Ajmer

Computer Based Numerical & Statistical Techniques: Udit Aggarwal- Dhanpat Rai Publication Delhi

04 BPE -106

SURVEYING

Course/Paper: 04 BPE -106

BPE Semester-IV

Surveying, Distance measurement by chain and tape, Electronic Distance Measurement (EDM), chain Surveying, compass traversing. Leveling, Theodolite, Traversing with a theodolite, Total Station, Global Positioning System (GPS).

References

- Arora,K.R."Surveying" Volume I & II.
- Punmia,B.C. "Surveying" Vol. I & II. Laxmi publication
- Principles and use of surveying instruments by Clendinning and oliver.
- Kanitkar "Surveying"
- Duggal S.K., "Text book-Surveying" Vol. I & II.

PRACTICAL

04BPE201

PETROLEUM ENGINEERING PRACTICAL LAB II

Course/Paper: 04 BPE -201

BPE Semester-IV

Production and Product Testing Lab

- Petroleum refining processes and operation.
- Testing of Thermal cracking,
- Checking of catalytic cracking,
- Study of hydro-forming, catalytic reforming, alkylation's, polymerization, isomerisation
- Study of breaking, de-waxing & de-asphalting operations

6. Study of: Liquid, Solid and gas lubricants.
- 7 Study of lubricating greases: properties ingredients & additives

04BPE202

TRANSDUSER & MEASUREMENT LAB

Course/Paper: 04 BPE -202

1. Study the performance of piezo electric transducer for measuring acceleration.
2. Plot the characteristic of potentiometric transducer.
3. To draw the V-I characteristics of Solar panel.
4. To study the operation of Hall effect transducers.
5. Study the performance for measuring distance using ultrasonic transmitter and receiver.
6. Study the performance for measuring displacement-using LVDT.
7. Draw the characteristics for the following temperature transducers: (a) RTD (Pt-100)
(b) Thermistors (c) Thermocouple
8. To study and draw the characteristics of LDR.
9. Measure the speed of *table* fan by using stroboscope.
10. Measurement of strain/force with the help of strain gauge load cell.
11. Study the various pressure and force sensors.
12. Study the Flapper Nozzle mechanism

04BPE203

SURVEYING LAB-I

Course/Paper: 04 BPE -203

BPE Semester-IV

1. Ranging and Fixing of Survey Station.
2. Plotting Building Block by offset with the help of cross staff.
3. To determine the magnetic bearing of a line
 - a. Using surveyor's compass
 - b. Using prismatic compass
4. Measurement and adjustment of included angles of traverse using prismatic compass.
5. To determine the reduced levels using Tilting Level.
6. To determine the reduce levels in closed circuit using Dumpy Level.
7. To carry out profile leveling and plot longitudinal and cross sections for road.
8. To carryout temporary adjustment of Theodolite.
9. Measurement of horizontal angle.
 - a. By method of repetition.
 - b. By method of Reiteration.
10. To determine the tachometric constant.
11. To determine the horizontal and vertical distance by tachometric survey.
12. To study the various minor instruments.
13. To determine the area of a figure using a planimeter.

04BPE204

THERMAL LAB.-II

Course/Paper: 04 BPE -204

BPE Semester-IV

I.C. Engine Lab.

1. To find the valve timing of a four stroke single cylinder diesel engine and show the valve timing on actual P.V.diagram
2. To conduct load test on diesel engine.
 - a) Determine the Willien's line by graphical and regression method.

- b). To find out brake power, brake and indicated thermal efficiency, mechanical efficiency, bsfc, isfc, IMEP, BMEP, Air fuel ratio, specific brake output, mean piston speed, clearance volume.
- c. Plot-Load v/s above parameter
3. To measure the smoke density by smoke meter in diesel engine and plot load v/s smoke density at constant speed.
4. To find out the corrected performances parameters (as indicated in Exp. 2(b)) on diesel engine and to plot the heat balance sheet.
5. Study of Zenith carburetor and a simple carburetor used in two wheelers.
6. To plot the pressure ratio profile along the length of a given nozzle by using different back pressures and to compare actual and theoretical area
7. To perform load test on dual fuel engine at (I) constant load variable gas supply. (II) Variable perform load test on 2-stroke petrol engine at constant speed variable throttle and variable speed constant gas supply
8. To perform load test on 2 stroke engine at constant speed variable throttle and variable speed constant throttle
9. To study the (A) Wankle Engine (B) electronic Ignition System (C) Conductivity of Metal rod

V Semester Petroleum Technology

V Semester Petroleum Technology

05 BPE -101

THERMODYNAMICS OF PETROLEUM RESERVOIR FLUIDS

Course/Paper: 05 BPE -101

BPE Semester-V

Maxwell relations and basic thermodynamic relations, Work calculation, Thermodynamics of Gases and Liquid Hydrocarbons, Perfect & imperfect gaseous mixtures, Equation of state, Law of corresponding states, Joule Thompson effect, Fugacity and fugacity coefficient of gases and gaseous mixtures, Solution Thermodynamics, Phase Rules, Statistical Thermodynamics

References:

1. Engineering thermodynamics : P.K. Nag, Tata Mc-Graw Hill Publishing Ltd., New Delhi Mc Graw Hill
2. Engineering thermodynamics: C.P. Gupta, Rajendra Prakash, Nemi Chand & Bros
3. Thermodynamics by-Yunus A Cengel (university of Nevada Reno & Michall A Boles North Caralina State University (Publisher Tata MC Graw hill)
4. Chemical Engg Thermodynamics by—Pandey and chaudhri
5. Chemical Thermodyamics : J.C.Vanness In India adopted by B.I Bhatt Ahemdabad Publisher Tata MC Grawhill

05 BPE -102

PETROLEUM PRODUCTION OPERATION & ENVIREMENTAL MANAGEMENT

Course/Paper: 05 BPE -102

BPE Semester-V

Well Completion Design, Conventional and Unconventional techniques, Well Testing, surface layout, test design & analysis of test data. Production characteristics of Horizontal and multilateral wells,. Multi phase flow in tubing and flow-lines. Designing Gravel Pack for Sand Control: Sand control techniques, Formation Sand. Well Servicing & Work-over, Well Stimulation Techniques - Design & Selection: Type & description, design of matrix acidizing - Sandstone and carbonate reservoirs.

Environment concepts for onshore & offshore including impact & threats, Production Operations on Environment, Oil mines regulations and other environmental legislations.

References

1. Well site Geological Techniques for Petroleum exploration By shney Bet al
2. Petroleum exploration Hand Book by Moody G.B
3. Slandered Hand Book of Petroleum & Gas engineering : William C. Lyons J Plsga, Gulf Professional Publishing comp (Elsevier)
4. Petroleum Engineering Drilling & well Completion: Gatlin C. ,Prentice Hall Inc1960

5. Introduction to Environmental engineering and Science : Gilbert M.masres ,Pearson Education 2004
6. Environmental Laws ,Rules ,Guidelines Compliance and slandered : R.K. Diwedi Enviromedia Vol I & II
7. Environmental Control in Petroleum Industry: Reis J.C. ,Gulf publishers 1996

05 BPE -103

APPLIED ELECTRICAL ENGINEERING

Course/Paper: 05 BPE -103

BPE Semester-V

3-phase induction motor. Ward- Leonard method of speed control for DC motor. Thyristor controlled variable speed AC and DC motor. Electrical power distribution, Load factor, Sub-station arrangement. Protective relays, Power Cables, Intrinsically safe circuits. Diesel-electrical oil rigs IE rules applied to oilfields.

References:

1. A Course in Power System :J.B. Gupta ,Publisher S.K. Kataria & Sons New Delhi
2. Electrical Machines : P.S. Bhimbra , Khanna Publishers New Delhi
3. Electric Drives & Control: J.K. Dubey
4. Electrical Machines : H. Cotton

05 BPE-104

SEDIMENTARY AND PETROLEUM GEOLOGY

Course/Paper: 04 BPE -104

BPE Semester-V

Sedimentary rocks, structures morphology and Role of sediment logy in petroleum exploration. Origin, migration & entrapment of oil. Petroleum Geology of producing Indian oil fields. Porosity and Permeability relationship – Porosity. Permeability. Porosity – Permeability relationship. Electrical properties of rocks. Measurement of formation resistivity. Correlation of FR with porosity, permeability and water saturation. FR of Shaley Reservoir rocks. Effect of stree on porous rocks. Formation evaluation

References

- a) Applied Petroleum Reservoir Engineering : Craft B.C and Hawkins M.F. ,Prentice hall 1991
- b) Theory and practice of Measuring Reservoir Rocks and Fluid Transport Properties : Djebbar Tiab
- c) Introduction to Petroleum Geology----- G.D. Hobson & E.L. Tiratsoo
- d) Principles of Sedimentology and Stratigraphy: Boggs S., Merrill Publishing co Toronto 1995
- e) Petroleum Reservoir Engineering : Amyx J W. Bass D.M., and Whiting R.L. ,Mc Graw Hill 4998

05 BPE -105

FLUIDIZATION ENGINEERING

Course/Paper: 05 BPE -105

BPE Semester-V

The phenomenon of fluidization; Liquid like behavior of fluidized bed; Advantages and disadvantages of fluidized beds; Industrial applications of fluidized beds; Dense bed fluidization; Distributors, gas jets and pumping power; Bubbles in dense beds; Bubbling fluidized beds; Entrainment and elutriation from fluidized beds; High Velocity fluidization; Solid movement, mixing, segregation and staging; Gas dispersion and gas interchange in bubbling beds; Particle to gas mass and heat transfer; Heat transfer between fluidized beds and surfaces; Design of fluidized bed reactors

References

1. Fluidized Bed Boiler : P.C. Chatopadhya , Galgotia Publication SBN81-7515-542
2. Fluidization Engineering :D. Kunii, Industrial Consultant, USA Octave Levenspiel, Oregon State University, USA 1991,ISBN-13: 978-0-409-90233-4,ISBN-10: 0-409-90233-0, Imprint: BUTTERWORTH HEINEMANN
3. Fluidization Engineering: Octave Levenspiel, Daizeo Kunii, Daizo Kunii, Butterworth-Heinemann 1991 ISBN: 0409902330 ,EAN: 9780409902334
4. Fluidized Bed Systems : , Dg Cec, ,Publisher: [Springer](http://www.springer.com) 1983 ISBN: 9027716161 EAN: 9789027716163

05 BPE -106

PETROLEUM AND ITS PRODUCTS

Course/Paper: 05 BPE -106

BPE Semester-V

Unit-I Introduction of mineral oils, their origin and mode of occurrence. Oil resources and refineries in India.

Composition of petroleum Refinery products and their test methods.

Unit-II Evaluation of oil stocks introduction to processing of petroleum; general processing and crude distillation, refinery products and their applications, natural gas, gasoline, naphtha kerosene, fuel oils and gas oils, petroleum waxes, lubricating oils, tar and asphalt.

Unit-III Petroleum refining processes and operation: Thermal cracking, catalytic cracking, hydro forming, catalytic forming, alkylation's, polymerization, isomerisation and other auxiliary process e.g. vis-breaking, de-waxing and de-asphalting operations. Manufacture of paraffin wax and microcrystalline waxes.

Unit-IV Introduction to lubricants: Liquid, Solid and gas lubricants and their applications.

Lubricating oils: Liquid mineral lubricants ,Synthetic liquid lubricants. Physical properties, additives , manufacture of lubricating oils. Analysis of lubricating oils.

Lubricating Greases: Properties, types, ingredients, additives, analysis of lubricating greases as per BIS test methods. Manufacture of lubricating Greases-Processes and equipments.

Unit-V Introduction to petrochemicals; manufacture of alkyl aryl compounds, ethylene oxide condensation products benzene, toluene, xylem, butadiene's, vinyl chloride and styrene etc.

References

Petroleum Products Hand Book By V. B. Guthrie

Petroleum Products Handbook McGraw-Hill Education (December 1960) ISBN-10: 0070252955 ,ISBN-13: 978-0070252950

Handbook Of Petroleum Product Analysis ,James G. Speight. Publisher: Wiley-interscience

Petroleum Fuels Manufacturing Handbook: Surinder Parkash. ISBN,0071632409 / 9780071632409

PRACTICAL

05BPE201

CAD LAB

Course/Paper: 05 BPE -201

BPE Semester-V

A. **Turbo C Graphics:** To make C programs to Animate/ different Mechanisms:

1. Slider Crank Mechanism
2. Quick Return Mechanism
3. Cam Follower etc.

B. **Auto CAD**

1. To make a component drawing.
2. To make a assembly drawing.
3. To make sectional views using concept of layers
4. To develop 3D surface models
5. To develop 3D solid models
- 6.

C. **MINI PROJECT** Using Turbo C/ Auto CAD

05BPE202

SEDIMENTRY & PETROLIUM GEOLOGY PRACTICAL

Course/Paper: 05 BPE -202

BPE Semester-V

1. Physical Properties of Minerals
2. Physical Properties of Rocks
3. Identification of Minerals in Hand Specimen
4. Identification of Rocks in Hand Specimen
5. Identification of Geological features through wooden Models

- a) Structural Geological Diagrams
- b) Petrological Diagrams
- c) Engineering Geological Diagrams
- 6. Interpretation of Geological Map (10 Nos.)
- 7. Dip & Strike Problems (8 Nos.)
- 8 Estimation of Thickness, distance & Depth of ore body
- 9 Estimation of Throw & nature of the faults
- 10 Identification of important sedimentary rocks in Microscopic level

05BPE203

PROD. ENGG. LAB

Course/Paper: 05 BPE -203

BPE Semester-V

- 1. Study of foundry shop equipment.
- 2. To Prepare mould of a given moulding sand sample
- 3. To determine the moisture content in the given moulding sand
- 4. To determine the permissibility of the given sample of moulding sand
- 5. To study the sieve shaker equipment and to determine the grain fineness number of a given sample
- 6. To perform the clay content test

SHEET METAL SHOP

To prepare a funnel and solder to joint

WELDING SHOP

Demonstration of various welding defects and dye penetrate test.

PATTERN SHOP

- 1. To prepare a two piece pattern as per draw
- 2. To prepare a pattern with core prints and a core box draw
- 3. For the job given, prepare a drawing with all types of allowances and casting consideration. Show the position of riser runner, chills & chaplets etc, needed for directional solidification Drag.
- 4. Quiz and Viva based on the above shops at an appropriate time will be arranged

TURNING SHOP

- 1. Study of lathe machine, lathe tools, cutting speed, feed and depth of cut
- 2. To perform step turning, knurling & chamfering on lathe machines per drawing.
- 3. Taper turning by tail stock off-set method and to grind it by grinding attachment as per drawing
- 4. To taper turn using turning attachment as per drawing
- 5. To perform square threading, drilling and taper turning by compound rest as per drawing

METROLOGY:

- 1. Study of the following measuring instruments. Vernier CallBMDr, Vernier height gauge, depth micrometer, inside, outside micrometer.
- 2. Study & use of bevel protector and combination set. Quiz and Viva based on the above shop will be arranged at an appropriate time
- 3 To calibrate pneumatic comparator and measure taper of a given work piece.

05BPE-204

SURVEYING PRACTICALS

Course/Paper:05BPE-204

BPE Semester V

- 1. To determine the height of an object by trigonometrically leveling (Single plane method)
- 2. To determine the height of an object by trigonometrically leveling (two plane method)
- 3. To determine the height of an unknown point by double leveling
- 4. To measure and adjust the angle of a braced quadrilateral
- 5. To prepare a contour map by indirect contouring
- 6. To prepare a map of a given area by plane tabling
- 7. To carry out leveling through help of a theodolite.

VI Semester
VI Semester Petroleum Technology

06 BPE -101

DRILLING SYSTEM DESIGN AND DIRECTIONAL DRILLING

Course/Paper: 06 BPE -101

BPE Semester-VI

Casing Design, Cementing Practices, , Directional Drilling, and methods tools, Well Surveying, Measurements While Drilling etc.

Well Planning, Two Dimensional, Horizontal, Tools, Techniques, MWD, surveying – Radius of Curvature, Long's Method – Errors, Muds, Mud Use, Property measurements, Types, - Pneumatic (Air, Gas, Mist, Foam), Water based, Oil based, solids Control, Definitions, Equipment, Problems, Contaminations Effect.

Hydraulics, Classifications of Fluids, Rheological Models – Rotary Drilling Hydraulics – Jet Hydraulic Optimizing and Maximizing – Circulations Rate Selection – Drill Bit – Jet Sizing – Equivalent Circulations Density, Hole Cleaning. Theory – Vertical and Deviated Holes, Annular Velocities – Carrying Capacity – Pills and Slugs.

References

1. Drilling & Casing Operations : J.A. Jim Short , Penwell Publishing Company South Sheridan Road Tulsa Oklahoma 74101
2. Drilling engineering & Well completion: A.A Khan ,Mishra ,.R. Pataria
3. Petroleum Engineering ,Drilling and well Completion: Gatlin C ,Prentice Hall Inc 1960
4. Well Design Drilling & Production : Craft B.C. etal Prentice Hall 1962

06 BPE -102

PETROLEUM FORMATION EVALUATION

Course/Paper: 06 BPE -102

BPE Semester-VI

UNIT – 1 Aims and objectives of well logging. Direct Methods and Indirect Methods Special Type of Logging Tools Reservoir formations. Borehole conditions. Fundamental concepts in borehole geophysics physical properties of reservoir rocks. Formation parameters and their relationships: formation factor, porosity, permeability, resistivity, water and hydrocarbon saturations, and movable oil. Archie's and Humbles equations.

UNIT – 2 Principles, instrumentation, operational procedures and applications of different geophysical logs: S.P., electrical, induction, nuclear, sonic, calBMDr, temperature, dip and direction. Natural gamma ray spectrometry log, nuclear magnetic log, litho density log, neutron activation technique, thermal neutron decay time log, chlorine and oxygen logs.

UNIT – 3 Recording, transmission and processing of log data. Formation evaluation for hydrocarbons. Qualitative and quantitative interpretations of well log data. Overlays and cross-plots. Determination of reservoir parameters – porosity, resistivity, permeability, water and hydrocarbon saturation, movable oil. Lithology determination by neutron, density and sonic cross-plots, dual mineral method, triporosity method, litho porosity cross-plot (M-N plot), clean sand and shaly sand interpretations.

UNIT – 4 Sub-surface correlation and mapping from log data. Delineation of fractures from logs. Production logging. Well logging for metallic and non-metallic minerals: radioactive and non-radioactive evaporates, coal, sulphur. Borehole geophysics for groundwater exploration. Effective pay thickness of an aquifer. Saline water-fresh water interface from log data. Determination of groundwater flow direction by logs.

UNIT – 5 Theoretical computations of normal and lateral log responses. Identification and delineation of sub-surface formations from well log data. Calculation of reservoir parameters: formation factor, porosity, permeability, resistivity, water and hydrocarbon saturations, and movable oil. Sub-surface correlation of formations and interpretation of field data.

References

1. Oil well Drilling Technology: Mc Craycole , Oscar Publication
2. Well Logging and Formation Evaluation (Gulf Drilling Guides):Drilling Gulf Professional Publishing 2005 ,ISBN-10: 0750678836 ISBN-13: 978-0750678834

06 BPE -103

NATURAL GAS ENGINEERING

Course/Paper: 06 BPE –103

BPE Semester-VI

UNIT – 1 Natural gas technology and earth science: Branches of petroleum Industry. Sources of Information for natural gas engineering and its applications. Geology and earth sciences: Earth sciences-Historical geology, Sedimentation process, Petroleum reservoirs, Origin of petroleum. Earth temperatures & pressure, Earth temperatures, Earth pressure. Petroleum: Natural gas, LP gas, Condensate, & Crude oil.

UNIT – 2 Properties of Natural Gases: and hydrocarbon, Liquids. typical compositions. Equations of state: general cubic equations, specific high accuracy equations. Use of equation of state to find residual energy properties, gas measurement gas hydrates, condensate stabilization, acid gas treating, gas dehydrations, compressors, process control deliverability test, gathering and transmission, and natural gas liquefaction.

UNIT – 3 Gas Compression: Positive displacement and centrifugal compressors; fans. Calculation of poser requirements. Compressible Flow in PBMDs: Fundamental equations of flow: continuity, momentum, eley equations.

UNIT – 4 Isothermal flow in pBMDs: the Weymouth equation. Static and flowing bottom-hole pressures in wells. Fundamentals of Gas flow in porous media: Steady state flow equations. Definition of pseudo-pressure function. Transmission of Natural Gas, Underground storage and conservation Gas flow in cylindrical reservoirs: general equation for radial flow of gases in symmetrical homogeneous reservoirs

UNIT – 5 Non-dimensional forms of the equation; derivation of coefficients relation dimensionless to real variables. Infinite reservoir solution: Pseudo-steady-state solution. Gas Well Deliverability Tests: Flow-after-flow tests: prediction of IPR curve and AOF for the well. Isochronal tests. Draw down tests: need for data at two flow rates. Sweetening and Processing for LPG, LNG,CNG, system., Unconventional source of Gas

References

1. Natural Gas Engineering (Production & Storage): Katz D.L.etal ,Mc Graw –hill Singapore
2. Slandered Hand Book of Petroleum & Gas Engineering II Edition William C Plisga< Gulf Professional Publishing
3. Gas Production Operations : Beggs DH ,Technip1984
4. Gas reservoir Engineering : LeJ Wattenbarger R a ,Society of Petroleum engineers TX USA 1996
5. Natural Gas production engineering : Ikoku Chi, John Wiley and Sons 1984
6. Gas Production Engineering :Kumar Sanjay, Gulf Professional publishing TX USA 1987
7. Hand Book ofNatural Gas Transmission & Processing : Mokhatab S Poe and W A & Speight , Gulf Professional Publishing 2006

06 BPE -104

INTERNAL COMBUSTION ENGINES

Course/Paper: 06 BPE -104

BPE Semester-VI

.Engine classification, Air standard cycles, otto, diesel, stirling, Ericson cycles, Actual cycle analysis Two & four stroke engines, SI CI Engines valve timing diagrams , Rotary engine Stratified charge engine
Fuel for SI & CI engine Important qualities and Rating of SI engine fuels & CI engines ,Dopes , additives ,Gaseous fuels ,LPG, CNG, Biogas, Producer gas, alternative fuels for IC engine

SI Engine-Carburetion ,Mixture requirements, Theory &Types of carburetor, MPFI ,Combustion in SI engine ,Flame speed ,Ignition delay, Abnormal combustion and its control ,Combustion chamber design for SI engines ,Ignition system requirements Magneto & Battery ignition system ,Ignition timings& Spark Plugs ,Electronic ignition

CI Engine –Fuel Injection in CI engine ,Types of Ignition System, Fuel Pump, Fuel Injectors, Injection Timings, Combustion in CI engine ,Ignition delay, Knock and its control, Combustion chamber design of CI engine, Scavenging in two stroke engine emissions & its control

Introduction , types of Supercharger, turbocharger, Rotary Piston and variable compression engine

References

- a) IC Engines : M.L.Mathur , R.P.Sharma, Dhanpat Rai Publications
- b) IC Engine : Edward FObert ,Harper & Row
- c) Ic Engine : Heywood

06 BPE -105

OBJECT ORIENTED PROGRAMMING AND ADVANCED NUMERICAL METHODS

Course/Paper: 06 BPE -105

BPE Semester-VI

UNIT- 1 Introduction to Object Oriented Programming: Basic concepts: Class, Object, Method, Message passing, Inheritance, Encapsulation, Abstraction, Polymorphism.

UNIT- 2 Basics of C++ Environment: Variables; Operators; Functions; user defined, passing by reference, passing an array to the function, inline function, scope, overloading; Pointers: objects and lvalue, arrays and pointers, the new and delete operators, dynamic arrays, arrays of pointers and pointers to arrays, pointers to pointers and functions; Strings: String I/O, character functions in ctype.h, string functions in string.h.

UNIT-3 Object oriented concepts using C++: Classes: Member functions, Friend functions, Constructors, Access functions, Private member functions, class destructor, static data and function members; Overloading: inline functions, this operator, overloading various types of operators, conversion operators; the String Class; Composition and Inheritance: Hierarchy and types of inheritance, protected class members, private versus protected access, virtual functions and polymorphism, virtual destructors, abstract base classes.

UNIT -4 Templates and Iterators: function and class templates, container classes, subclass templates, iterator classes; Libraries: standard C++ library, contents of a standard C headers, string streams, file processing: Files and streams classes, text files, binary files, classification of files, the standard template library.

UNIT -5 Advance Numerical methods for solving different complex equations

References

1. Object Oriented Programming with C++: E.Balagumswamy, Tata Mc-Graw Hill Publishing Ltd., New Delhi McGraw Hill
2. Object Oriented Programming with C++: Vikash Thada College Book Centre
3. Object Oriented Programming with C++: Lalit Arora, Katsons

06 BPE -106:

PETROLEUM REFINING AND PETROCHEMICALS

Course/Paper: 06 BPE -106

BPE Semester-VI

UNIT -1 Crude oil and its Distillation: Origin, exploration and production of Petroleum, Types of crudes, composition, characteristics, Impurities in crude oils, Crude oil distillation; atmospheric distillation, vaccume distillation, Operation of fractionating columns and improvements in fractionating columns.

UNIT -2 Lube oil manufacturing processing: Vaccum distillation, Solvent deasphalting, Solvent Extraction, Solvent Dewaxing, Solvent deoiling.

UNIT –Corrosion Control in Refinery Processes: Types of Corrosion, corrosion control in crude oil distillation, thermal cracking, fluid catalytic cracking, amine gas processing, steam and condensate lines. Corrosion from combustion process.

UNIT- 4 Unit processes: Alkylolation, oxidation, dehydrogenation, nitration, chlorination, sulphonation and isomerisation.

UNIT- V Polymerisation: production of polyethylene, PVC, Polypropylene, SAN, ABS, SBR, Polyacrylonitrile, Polycarbonates, Polyurethanes, Nylon, PET.

References

1. “Modern Petroleum Refining Processes” Edition 3, :B.K. Bhaskara Rao ,Oxford and IBH Publishing Company Pvt. Ltd., New Delhi.
2. “Unit Processing in Organic Synthesis” Edition 5: Groggins, Tata McGraw Hill 198
3. “ Petroleum Refining Technology” by Ram Prasad ,Khanna Publishers Delhi
4. “Advance Petrochemicals “ by G. B N Sarkar ,Khanna Publishers Delhi
5. “Petroleum Refining “ by Dr G N Sarkar, Khanna Publishers Delhi
6. Nelson W.L., “Petroleum Refinery Engineering”, McGraw Hill Publishing Company Limited, 1985
7. Watkins, R.N., “Petroleum Refinery Distillation, second edition, Gulf Publishing Company, Texas 1981

PRACTICALS

06BPE201

PETROLEUM ENGINEERING PRACTICAL – III

Course/Paper: 06 BPE -201

1. PETROLEUM FORMATION EVALUATION: Direct Methods and Indirect Methods. Special Type of Logging Tools.
2. Study of flow of fluids.
3. Study of engineering. gas flow measurement, Natural Gas dehydration, sweetening and Processing for LPG, LNG.
4. Techniques of transmission of Natural Gas.

06BPE202

OBJECT ORIENTED PROGRAMMING AND ADVANCED NUMERICAL METHODS

Course/Paper: 06 BPE -202

BPE Semester-VI

1. Program for revising control statements, arrays and functions.
2. Program using string handling and various functions described in string.h, ctype.h.
3. Program using structures and sorting algorithm (Insertion, Selection, Quick, Heap sort) and functions described in maths.
4. Program using file handling and related functions defined in stdio.h, io.h.
5. Program using pointers, array and pointers, pointers to structures, dynamic memory allocation.

List of Programs in C++

6. Program using basic I/O and control statements.
7. Program using class, objects, objects as function parameters.
8. Program using functions and passing reference to a function, inline functions. Program using Inheritance and virtual base class.
9. Program using pointers, arrays, dynamic arrays. Program using functions defined in c type.h and string.h.
10. Program using constructors, destructors. Program using function and operator over loading List of program in C++ implementing Data Structures
11. Creating and managing (add, delete, print, insert) nodes of a Linked list.
12. Creating and managing (create, pop, push etc.) stacks and queues.

06BPE203

PRODUCTION PRACTICE LAB

Course/Paper: 06 BPE -203

BPE Semester-VI

1. To study of single point cutting tool geometry & to grind the tool to the given tool geometry. Write importance of various angles and to prepare a capacity chart of the Tool & cutter grinder.
2.
 - a. To study milling machine, milling cutters, indexing methods and various indexing heads.
 - b. Prepare a gear on milling machine.
3. Prepare a hexagonal/octagonal nut using indexing head on milling m/c and to cut bsw/ matrix internal threads on lathe (to meet with job).
4.
 - a. To prepare the capacity chart for a lathe machine.
 - b. To cut multi-start square/metric thread.
 - c. To cut external metric threads & to mesh it with the nut (drg).
 - d. Prepare the process chart for the job.

To prepare the job by eccentric turning on lathe machine drawing.
 To study shaper machine & its mechanism and calculate its quick return ratio To prepare a job on shaper from given ms rod drawing
 To study the effect of rake angle on chip thickness ratio and the shear angle in orthogonal machining.
 Using drill dynamometer measure the torque and thrust force in drilling and to plot the characteristics, torque, force & power v/s speed & feeds.
 To measure a gap by means of slips gauges. To compare & assess the method of small-bore measurement with the aid of spheres.
 To check the accuracy of a ground machined/lapped flat surface. To check the accuracy of machined cylindrical surface.
 To measure effective diameter of a screw thread by three wire method.
 To perform alignment test on a center lathe

Measure the taper of a given test piece with the help of a single bar and Compare it.
To plot tangential, feed and radial force as a function of cutting speed a feed in turning.

06BPE -204

PROPULSION LABORATORY

Course/Paper: 06 BPE -204

BPE Semester-VI

1. Study of free convective heat transfer over a flat plate.
2. Study of Goblin and PIIF2 engines.
3. Ignition studies of solid and liquid propellants.
4. Operation of a ramjet engine.
5. Study of free jet.
6. Study of wall jet.
7. Study of Hybrid propulsion system.
8. Preparation of HTNR fuel grain for hybrid rocket.
9. Study of forced convective heat transfer from a plate.
10. Burning rate measurement of solid propellants in strand burner.

VII Semester Petroleum Technology

07 BPE -101

PETROLEUM ENGINEERING DESIGN

Course/Paper: 07 BPE -101

BPE Semester-VII

Review of various geological, reservoir engineering and petroleum production principles and methods with reference to oil and gas field development. Drainage of oil and gas reservoirs by wells.
Theoretical fundamentals of oil field development. Necessity and scope of development plan. Various stages in the life of oil and gas field development.
Requirement of data sources. Various field data sample collection. Well surveys. Laboratory analysis.
Creation of integrated approach for statistical. Technical and cost database.
Hydrocarbon reserves in place. Planning for field exploitation under natural mechanism. Well spacing and location.
Well Performance. Field production performance evaluation.
Need of additional energy for pressure maintenance of a reservoir.
Field evaluation for EOR. Field development with application of secondary and tertiary recovery. Field development with reservoir management. Application of mathematical modeling and computer simulation for optimum field development.
Economics of field development. Consideration of down stream utilization and consumption.
Special consideration for gas field developments. Development of marginal fields. Indian Scenario.
Planning of various surface installations, Group Gathering Stations
Basic principles, Techniques, descriptions of artificial lift methods.

References

- a) Oil and Gas field Development : SantKumar,2000 India
- b) Oil & Gas Field of India: Laxman Singh ,Indian Petroleum Publishers2000
- c) API Gas Lift Manual : American Petroleum Institute, Third Edition 1994
- d) Technology of Artificial Lift : Brown K ,Penwell Publishing Co Tulsa 1984
- e) Oil and Gas Field Development. ; Santkumar, 2000 India
- f) Oil and Gas Fields of India.: Laxman Singh, Indian Petroleum, Publishers. 2000

07 BPE -102

ON SHORE AND OFFSHORE DRILLING

Course/Paper: 07 BPE -102

BPE Semester-VII

UNIT-1 Introduction to offshore oil and gas operations.. Sea States and Weather, Offshore Fixed and mobile Units, Offshore Drilling, Difference in drilling from land, from fixed platform, jack up, ships and semi submersibles. Offshore Well Completion, Offshore Production systems, Deep-water technology, Divers and Safety, Offshore Environment.

UNIT-2 Introduction; classification, properties of marine sediments. Consolidation and shear strength characteristics of marine sediments. Planning and site exploration.

UNIT-3 Drilling. Sampling techniques. Laboratory testing, In situ testing methods and geophysical methods. Current design practices of pile supported and gravity offshore structures.

UNIT-4 Dynamic analysis of offshore structures. Centrifugal modeling. Anchor design. Break out resistance analysis and geotechnical aspects of offshore pBMDline and cable design. Field instrumentation and performance observation.

UNIT-5 Offshore soil mechanics; offshore pile foundations and caissons; Design of breakwaters; Buoy design and mooring systems; Offshore drilling systems and types of platforms; Ocean mining and energy systems. ROV. Onshore drilling-on shore oil rigs. onshore drilling equipments-onshore rig structures-hydraulics applied in onshore rigs.

References

1. Standard Hand Book of Petroleum & Natural Gas Engineering” – 2nd Edition 2005-William C. Lyons & Gary ,Gulf professional publishing comp (Elsevier).
2. Well site Geological Techniques for petroleum Exploration by Sahay. B et al.
3. Drilling & Producing Off shore: Stewart H.R , Penwell Publishers
4. Offshore Drilling completion and production: Mazurkiewicz B.K.,Eta offshore seminar , Penwell Publishers
5. Offshore platforms and PBMDlines : Mazurkiewicz B.K,TransTech Publication 1987
6. Petroleum Exploration Hand Book by Moody, G.B.

07 BPE -103

INSTRUMENTATION & CONTROL

Course/Paper: 07 BPE -103

BPE Semester-VII

Introduction: General concepts and terminology, Laws, Languages and levels of process control.

Principle of operation of control system applications, problems etc. Introduction to microprocessors for control stems. Devices for measurement and control of variables: density, flow, level, pressure, temperature, and pH

Open Loop Response of Simple systems: Response of a thermometer bulb, concentration of a stirred tank. Temperature response of a stirred tank. Liberalization and perturbation variables. Response of pressure systems. Response of non-interacting first order elements in series and response of interacting elements in series.

Transient response of control system: General equations for transient response. Proportional control of single and two capacity process, Integral control-I control, Effect of measurement lag and time delay.

Level Control: Level as a major variable. Averaging control, Tank dynamics, and Measurement lag, Performance of averaging controllers.

Flow Control: Process lag, Measurement lag, Effect of transmission lag on flow control, control with noisy signal, on linear ties in flow systems.

Control of Distillation Column: Basic features of composition control schemes, Control of overhead composition, Bottom composition and both product compositions, Location of sensing element, Control of columns with varying feed rates, Pressure control, Control of feed temperature and internal reflux control.

Control of Heat Exchangers: dynamics of steam-heated exchangers, Control schemes, Measurement lag, Response of filled bulbs, Bullbs in vells, thermocouple response, Resistance thermometers, reducing the measurement lag.

References

1. Harriott- Process Control, Tata Mc-Graw Hill
2. D.P.Exkman-Automatic Process Control, Wiley Eastern Ltd.
3. Luyben - Essentials of Process Control, Tata Mc-Graw Hill

07 BPE -104

PETROLEUM EXPLORATION - GEOPHYSICAL METHODS

Course/Paper: 07 BPE -104

BPE Semester-VII

Basic concepts of magnetic, gravity, Electrical resistivity and seismic methods. Common depth point (CDP) profiling & stacking. Time corrections applied to seismic data. Vertical Seismic Profiling (VSP). Data processing and 3D data and interpretation. Introduction to 4D- a Reservoir Management Tool. Attribute analysis.

References

1. Introduction to Geophysical Formation Evaluation :James K. Hallenborg, *Geophysical Consultant, Tulsa, OK* 1997 ISBN: 9781566702638 ISBN 10: 1566702631
2. Standard Methods of Geophysical Formation Evaluation :James K. Hallenborg, *Geophysical Consultant, Tulsa* ISBN: 9781566702614 ,1997
3. Non Hydrocarbon Methods of Geophysical Formation :James K. Hallenborg, *Geophysical Consultant, Tulsa, OK* 1997,ISBN: 9781566702621
4. Non-Hydrocarbon Methods of Geophysical Formation Evaluation: James K. Hallenborg 1998,CRC-Press; ISBN-10:1566702623 ,ISBN-13: 978-1566702621
5. Well Logging and Formation Evaluation (Gulf Drilling Guides):Darling ,Gulf Professional Publishing- 2005,ISBN-10: 0750678836 ,ISBN-13: 978-0750678834

07 BPE -105

PETROLEUM EXPLORATION - GEOLOGICAL METHODS

Course/Paper: 07 BPE -105

BPE Semester-VII

Surface indications of subsurface oil and gas accumulations. Oil accumulation parameters etc, Development Geology and principles of prognostication of hydrocarbon reserves. Plate tectonics PACKAGING OF in Hydrocarbon accumulation onshore and offshore.

References

1. Wellsite Geological Techniques for Petroleum Exploration :Sahney. B. et al
2. Petroleum Hand book : Moody ,G.B
3. Advance Geological Methods in Petroleum Exploration and Development
4. Hydrocarbon Exploration and Production : Jahn F. Cook Grahaham .M ,Elsevier1984
5. Geology in Petroleum Production: Dickkers B.J , Elsevier publishers
6. Geological models and Petroleum entrapment: Magara K. , Elsevier Applied Scienet Publishers
7. Slanderred Hand Book of Petroleum & Natural Gas Engineering : William C. Lyon s & GrayJ Plisga ,Gulf Professional Publishing Com(Elsevier)

07 BPE -106

PACKAGING OF OILS, FATS AND ALLIED PRODUCTS

Course/Paper: 07 BPE -106

Introduction to packaging, elements of packaging, scopes and functions of a package. Materials used for packing: paper and paperboards; films and foils; glassware; metals plastics; wood; miscellaneous other materials; effect of environmental conditions on packing materials. Forms of packaging: folded cartons/boxes; corrugated board boxes, metal containers bags and envelopes, aerosols. Tubes, cans and molded plastic forms etc. Requirements of packaging surfaces for oils and allied products viz. Compatibility with the material to be packed printing and other miscellaneous requirements of a package. Printing of packaging surfaces, requirements of Printing and evaluation of printed surfaces. Coatings and laminations of the packaging surfaces, types and properties of coatings and limitations. Packing of various products viz. Oils and fats, soaps and detergents; cosmetics; petrochemicals, wax and wax products; essential oils and perfumes; lubricating oils and greases; by products of oils, soaps and allied industries. Criteria and selection of packing material for different products.

References

1. Hand Book Of Oils, Fats And Derivatives With Refining and Packaging Technology : E I R I Board ,Engineers India Research Institute 2007
2. Packaging Prototypes: Edward Denison , Quayside Pub Group ISBN: 2940361371,ISBN-13: 9782940361373
3. Hand Book on Modern Packaging Industries : NIIR Board ISBN: 8178330865,Publisher: Asia Pacific Business 2002

PRINCIPLES AND PRACTICE OF MANAGEMENT

Course/Paper: 07BMD101 B.TECH+MBA Semester-VII

Objective: This course provides the student with an understanding of how the philosophy of management underlies the B.TECH+MBA course taught on the program. The objective of this paper is to familiarize the student with basic management concepts and behavioral processes in the organization. The course will be an introduction to the way in which a firm can develop its managerial thinking, mission and strategy. It will enable students to evaluate and analyze a firm's management.

Philosophy, to understand the impact this philosophy has on the organization and operation of the business.

Section A

Management an Overview, Management Defined, Functions of Management, Managerial Roles and responsibilities, System and Contingency Approach for understanding organizations, Management Thought-Classical Perspective, Scientific Management, Administrative Management, Bureaucratic Management, Behavioral Perspective. Managerial processes, functions, skills and rules in an organization, social responsibilities of Business.

Fundamentals of Planning - Objectives, Strategies, Policies, Decision-making.

Fundamentals of Organizing- Nature and purpose, departmentation, Span of Management, Strategic organizing design, line and staff authority and decentralization.

Direction-concept, Leadership- Meaning and Importance, transitions in leadership theories, trait theories, behavioral theories, contingency theories, leadership styles and skills, managerial culture and leadership. Coordination.

Control- concept, nature and purpose, control technique, control of overall performance, span of control.

Section-B Case Study

References:

1. Management, Stonner, James & Others, Pearson Education N.D.
2. Management, Robbins & Coulter, Pearson Education N.D.
3. Principles of management, R.L. Nolakha , R.B.D. Jaipur
4. Principle of Management, Parthasarathy, Vrinda N.D.
5. Principle & practise of management, P.Subharao, Hari Shanker Pandey, Ramesh Book Depot
6. Management, G.S.Sudha, R.B.D. Jaipur

MANAGERIAL ECONOMICS

Course/Paper: 07BMD102 B.TECH+MBA Semester-VII

Objective:With economies becoming increasingly market oriented, it is becoming important for players in the market place to learn to conduct them in a manner that will assure them of success. The objective of the course is to provide insights into these aspects. Students of management must be exposed to the time tested tools and techniques of managerial economics to enable them to appreciate their relevance in decision-making.

Section-A Nature and Scope of Managerial Economics, role and Responsibility of a Managerial Economist. The fundamental concepts of Managerial Economics, theory of the firm and the role of profits

Theory of Demand- concept, determinants of Demand, Demand Function and econometric techniques. Theory of Supply- concept, determination, analysis, supply function. Elasticity of Demand- concept, measurement. Concept of Consumer's surplus.

Analysis and costs estimation-economic Concept of Cost, Different Types of Cost: Managerial uses of cost Function; Production Function to cost function-long run and short run total cost, Break-even Analysis. Make or Buy Decisions.

Market structure and pricing decisions-the competitive and monopoly model, monopolistic competition and oligopoly, pricing of multiple products.

National income-concept and measurement. Business cycles, fiscal policy, Inflation. The new economy-definition and characteristics.

Section-B Case study.

References:

1. Business Economics, Adhikary, manab, Excel books, N.D.
2. Economic Theory & Operation Analysis, Baumol, William J, N.D. PHI.

3. Business Economics, Agarwal & Deo, N.D. PHI.
4. Managerial Economics, D.N. Dwivedi, N.D. PHI.
5. Managerial Economics, Jhingen & Stephen, N.D. PHI.
6. Managerial Economics, Mote Others, N.D. PHI
7. Managerial Economics, Saraswat lodha, Ajmera Book depot.
8. Managerial Economics, Nair, Banerjee & Agarwal, Pragati Prakashan, Meerut.

INTERNATIONAL BUSINESS MANAGEMENT

Course/Paper: 07BMD103

B.TECH+MBA Semester-VII

Objectives: To develop an integrated understanding of International management aspects for devising and implementing Global management Strategies.

Section A

International business concept, nature, importance, dimensions, domestic and international business, process of internationalization-decision framework for internationalization. International trade theories, foreign direct investment theories, international business environment social, political, cultural and legal Globalization, rationalization: regional economic integration in Europe, NAFTA, role of regional and international institution: WTO, IMP, UNCTAD, SAARC in international trade, intellectual property in global business, role of WIPO.

Foreign exchange market, international monetary system

Method of entry in foreign markets, licensing, franchising, joint venture, subsidiaries, acquisition, strategic alliances, contract manufacturing.

International business: product decisions, market selection, distribution, promotion international pricing-factors, process and method, prerequisites. Transfer pricing, dumping, Control in international business: need objectives and approaches.

Section-B Case Study

References:

1. International Business, K. Aswathappa, Tata McGraw Hill.
2. International Business, Charles W L hill, Arun K Jain, Tata McGraw Hill.
3. International Management, Managing in a Diverse & Dynamic Global Environment, Arvind V Phatak, Rabi S. Bhagat. Tata Mc Graw Hill.
4. International Business, Donald Ball, Michael Geringer, Michael Minor, Tata Mc Graw Hill.
5. International Business management, Pragati Agarwal, Pragati prakashan, , Meerut.

BPE -201

PRACTICAL

07BPE201

MINOR PROJECT

Course/Paper: 07 BPE -201

BPE Semester-VII

07BPE202

INSTRUMENTATION AND CONTROL LAB

Course/Paper: 07 BPE -202

BPE Semester-VII

PROCESS CONTROL LAB

1. Operation of interacting and non-interacting systems.
2. Closed loop response of Flow control loop.
3. Closed loop response of Level control loop.
4. Closed loop response of Temperature control loop .
5. Closed loop response of Pressure control loop.
6. Study of complex control system (ratio/cascade/feed forward)

INSTRUMENTATION LAB:

1. Calibration of Flow meter.
2. Viscosity measurement.

3. pH meter standardization and measurement of pH values of solution.
4. Calibration of pressure gauge.
5. Conductivity meter calibration and measurement of conductivity test solution.
6. IR spectrophotometer

07BPE203

KINEMATICS OF MACHINES LAB

Course/Paper: 07 BPE -203

BPE Semester-VII

1. To study inversion of four bar chain
 - a. Coupling Rod
 - b. Beam Engine
2. Study of Quick return mechanism, (Crank and Slotted lever mech.)
 - a. To draw velocity and acceleration diagram for Crank and slotted lever mechanism.
3. Study of inversion of double slider chain
 - a. Oldham Coupling
 - b. Scotch Yoke
 - c. Elliptical Trammel
4. To plot displacement v/s θ curve for various cams.
5. Study for various cam - follower arrangements.
6. To determine co-efficient of friction.

07BPE204

INDUSTRIAL TRAINING

Course/Paper: 07 BPE -204

BPE Semester-VII

Industrial visit (20 marks) is for the duration of 10 days at the end of V semester and Practical Training (80 marks) is for the duration of 30 days at the end of VI semester. Both will be evaluated during the VII semester.

VIII Semester Petroleum Technology

08 BPE -101:

APPLIED PETROLEUM RESERVOIR ENGG AND MANAGEMENT

Course/Paper: 08 BPE -1016+

BPE Semester-VIII

Production behavior of gas, gas condensate and oil reservoirs. Generalized MBE etc. Drive mechanism and recovery factors. Performance prediction and reservoir pressure maintenance.

Geology of Reservoirs, Rock & fluid Properties Reservoir system, Reservoir Heterogeneities/Anisotropies .Geo statistics in Reservoir characterization

Reservoir management concepts and Processes, Fundamentals, Data acquisition, Interpretation and integration, Treatment of fractional flow & front. Reservoir modeling and simulation for reservoir management.

Integration of Exploration and development technology

Reservoir Performance analysis and Prediction .conservation of Reservoir Energy ,Influence of Reservoir structure on water control .Reservoir Economics ,Risk and un certainties, Economic evaluation and optimization

Application of Improved Recovery Processes, New Drilling and completion and production technology , Use of artificial intelligence

References

1. Applied Reservoir Engineering Second edition :craft B.C. and Hawkins M.F. Prentice Hall 1991
2. Mathematical Methods and modeling in Hydrocarbon exploration and production Part I and II : Amin Iske and Trygve Randen ,Springer 2004
3. Practical Reservoir Simulation : Carlson M.,Penwell2003
4. Integrated Petroleum Studies :Cossentino, Technip 2001
5. Reservoir Simulation : Mattex CC and Dalton R.L ,SPE textbook Series 1984
6. Integrated Petroleum Reservoir Management : Satter A. and Thakur G.C , Penwell Pubs 1994

7. Reservoir Management: Dallas , SPE Reprint series 1998

08 BPE -102

SURFACE OPERATIONS FOR OIL & GAS PRODUCTION

Course/Paper: 08 BPE -102

BPE Semester-VIII

Field Processing of Oil & Gas. Storage & Transport and metering. Transport of Oil & Gas. Treatment of oil & gas, surface facility for oil pumping station, gas pumping station, water injection, gas injection and EOR processes.

References

1. Surface Production Operations, Volume 2:, Second Edition:KenArnold Maurice Stewart ,Gulf Professional Publishing; 2 edition-1999,ISBN-10: 0884158225 ,ISBN-13: 978-0884158226
2. SURFACE PRODUCTION OPERATIONS, VOLUME 1:Maurice Stewart, President, Stewart Training Company Ken Arnold ISBN-13: 978-0-7506-7853-7,ISBN-10: 0-7506-7853-4,GULF PROFESSIONAL PUBLISHING
3. Surface Production Operations: Design Of Oil Handling Systems And Facilities(Volume 1):Maurice Stewart KenArnold
4. Surface Production Operations, Volume 2: Design of Gas-Handling Systems and Facilities: Ken Arnold & Maurice Stewart ISBN: 0884158225

08 BPE -103

OIL & GAS WELL TESTING AND ENHANCED OIL RECOVERY

Course/Paper: 08 BPE -103

BPE Semester-VIII

Well Test Analysis, Pressure Transient Tests, Enhanced Oil Recovery , methods and evaluation. Like Gas Injection, Miscible Flooding, Polymer Flooding, Carbon Dioxide Flooding and steam Flooding

References

1. Advances in Well Test Analysis: Earlougher R.C. ,SPE Monograph,1997
2. Well Testing : Lee W.J. ,SPE Text Book Series1982
3. Well testing in Heterogeneous Formations : Strltsova T.D. ,John Wileyand Sons 1988
4. Von Pollen. H.K. and Associates. Inc., “Fundamentals of Enhanced oil Recovery” – Penn Well publishing co., Tulsa (1980).
5. Enhanced Oil Recovery : Lake L ,Penwell publishers1991
6. Latil. M. et al., “Enhanced oil recovery” – Gulf publishing co. Houston (1980)
7. Enhanced Oil Recovery : Green W.W. and Willhite G.P., SPE2003
8. Standard Hand Book of Petroleum & Natural Gas Engineering” – 2nd Edition 2005-William C.Lyons & Gary J.Plisga-Gulf professional publishing comp (Elsevier).

08 BPE -104

PBMD LINE ENGINEERING

Course/Paper: 08 BPE -104

PBMDline systems definition and applications, codes and standard related to pBMDlines. PBMDline hydraulics: single phase gas and liquids, multiphase fluids and heavy /waxy crude. Design considerations for strength, stability and installation.

PBMDline materials and components. design aspects, covering such issues as risers,slug catchers, pigging facilities, etc. Basic design considerations for pBMDline facilities. PBMDline construction for cross country and offshore systems focusing on

welding. Pressure testing, pre-commissioning and commissioning PBMDline integrity aspects including inline inspection. Leak detection and emergency planning Considerations

Flow through pBMD, Flow through perforated pBMDs and porous media. Two phase flow. Line sizing for steam, vacuum, and slurry pBMDline.

Piping networks. Piping manifolds. Piping systems for petroleum products, yard piping; fire fighting,

Distillation and heat exchangers. Long distance pBMDlines.
Corrosion and materials of construction. Flow measurement. PBMD stress analysis and pBMD supports.
PBMD racks. Fabrication, installation and testing. Statutory regulations and safety aspects. Thermal insulation.
Costing for piping.
Design and construction of on/ offshore pBMDlines, Fields Problems in pBMDline, Hydrates, scaling & wax etc and their mitigation

References

1. Piping design handbook:Macetta.John , M dekar1992
2. Pipeline & risers : Young Boi ,Elsevier Ocean Engineering Book series 2001Volume 3
3. PBMD Line Corrosion Cathodic Protection : Parker M E and Peattie E G , ElsevierUSA 2001 Third edition

HUMAN RESOURCE MANAGEMENT

Course/Paper: 08BMD101

B.TECH+MBA Semester-VIII

Objective:To become a successful manager of people, students need to understand behavior of human resources in various organizational situations. In a complex world of industry and business, organizational efficiency is largely dependent on the contribution made by the human resources of the organization. The objective of this course is to sensitize students to various facts of managing people and to create an understanding of the various policies and practices of human resource management.

Section-A Human Resource Management-. Introduction and Scope, HRD-Concept, Need, Human Resource Planning-Concept, Process, job design-Concept approaches, job analysis, job description, job specification. Human Resource Procurement-Recruitment. Selection and induction.

Training, Training phases, Need Assessment, Establishment, Establishment of Training Objectives, Training method Lecture, case method, Role-playing. Business in Basket T- Group, Incident, Syndicate, Evaluation of a training Program. Performance measurement and reward systems-introduction, performance drivers, leadership and performance, reward management performance appraisals. Discipline. The grievance procedure.

Employee compensation-purpose and importance, components. non monetary rewards, workers participation in Management Employee. Strategic challenges for leadership, career management, SHRM Mergers and acquisitions.

Section-B Case/Problems.

References

1. Human Resource & Personal Management, Aswathappa K, TMH N.D.
2. Human Resource Mangement, L.M.Prasad, S.Chand
3. Human Resource Management, V.S.P.Rao, Excel books, N.D
4. International Human Resource management, Chris Brewster, University Press
5. Human Resource Management, Mizra S Saiyadain, Tata McGraw Hill.
6. Human Resource management, H.John Bernardin, Tata McGraw Hill

MARKETING MANAGEMENT

Course/Paper: 08BMD102

B.TECH+MBA Semester-VIII

Objective: Marketing is no longer a company department charged with a limited number of tasks- it is a company wide undertaking. It drives the company's vision, mission and strategic planning. Marketing succeeds only when all departments work together to achieve goals. The student will be able to understand these concepts.

Section-A Understanding Marketing Management-Importance and scope. Marketing strategies and plans marketing and customer value. Marketing insights-information and scanning the environment, analyzing the macro environment. Rural Marketing: The profile of rural market of India. The main problem area in rural marketing, channel Management in rural markets, marketing communication in Rural Markets, Market Segmentation in rural market.

Consumer Behavior and market segmentation- Targeting and positioning as per the changing pattern of Indian consumers-levels of market segmentation, segmenting consumer markets, market targeting. Product Life Cycle Strategy, New Product Development Strategy.

Management of Marketing Efforts: building brands dealing with competition, competitive brand strategy. Product Policy and Pricing decision, Channels of distribution.

Managing the Marketing program-advertisement, sales promotion, direct marketing and Personal selling, interactive marketing (E-Marketing) Marketing Research and Information System.

Section-B Case Study

References:

1. Marketing Management, Kotler Philip Keller.
2. Marketing Management Planning & Implementation, Ramaswamy & Namakumari,
3. Principle of Marketing, Kotler & Armstrong, Pearson Education N.D.
4. Marketing Management, Datta & Datta, Pearson Education N.D.
5. Marketing management, Kumar meenakshi, vikas publishing house.
6. Marketing management, kothari Sharma Mehta, RBD
7. Marketing management, P.K. Agarwal, Pragati prakashan, Meerut.

FINANCIAL MANAGEMENT

Course/Paper : 08BMD103

B.TECH+MBA Semester-VIII

Objective: The focus in this paper would be on issues related to financial management in the Indian Corporate Sector. The contents are related to the practices observed in Indian Corporate Sector. The objective is to enable and equip the manager with basic tools for applying financial analysis.

Section-A Meaning, Importance and Objectives of Financial Management; Time value of money; Conflicts in profit versus value maximization principle; Functions of chief financial officer.

Risk and Return- overview of capital market theory, Beta Estimation, CAPM, and APT.

Management of working capital; Cash and Marketable securities management; Treasury Management, Receivables management, Inventory management, Financing of working capital.

Investment decisions: Capital budgeting- concept, theory. Cost of capital. Risk analysis in capital budgeting.

Financing decisions: Concepts of operating and financial leverage; Capital structure Theory and Policy; Dividend Policy. Different sources of finance: Asset Based financing- Lease, Hire Purchase and Project Financing. Corporate Restructuring, Merger and Acquisition.

Section-B Case/Problems

Note: 50% of the question will be numerical.

References:

1. Principle of Corporate Finance, Brealy & Hyres, TMH N.D
2. Financial Management & policy, Horne James C. Van, TMH N.D
3. Financial Management, Khan Jain, TMH N.D
4. Financial Management, M.R.Agarwal, Garima Publication.
5. Financial Management, Prasan Chandra, Tata Mc graw hill.
6. Financial Management (Strategy Implementation & Control), Kapil Sheeba, Kapil K.N., Pragati Prakashan, Meerut.

MANAGEMENT INFORMATION SYSTEM

Course/Paper: 08BMD104

B.TECH+MBA Semester-VIII

Objective: The course is an introduction of computer architecture, networks and software tools. This will help students to understand the role of information systems and technology with current business and management application.

Section-A Information & System Concepts-Introduction --Concepts, Classification of Information, Methods of Data & Information Collection, Value of Information, Organization and Information, System: A Definition. Types of Systems, System Decomposition, Integration of Sub Systems, Elements of a System, Human as an Information Processing System. International Business and IT.

Management Information System-MIS: Definition, Nature & Scope, MIS Characteristics, Functions, Structure of MIS, Role of MIS, MIS as a Control System, Process of Management, Application of MIS, ERP & IT's Benefits.

Internet-Introduction to Internet, Why We Need Internet, Internet Tools & Services, www, Internet in India, Security, Web Browser, Future of Internet, E-Comm. an Introduction, E-Business Fundamentals.

New Information Technology: Interconnection and networking, Multimedia, Neural Networks, Artificial Intelligence, Executive Information System, Decision Support System (DSS) and Expert Systems. Issues for Senior Management: Management Control, Management Issues, Security Issues: Viruses, Worms and other creatures, I T issues for Management, Management in a Technological Environment, the changing world of Information.

Section-B Case Study.

References:

1. Computer Fundamental Concepts & system, P. K. Sinha, BPB PUB. N.D.
2. Management Information System, Jawadekar, macgraw Hill, N.D.
3. Management Information System, Lucas, macgraw Hill, N.D.
4. Management Information System, Davis, TMH
5. Information System Solutions: A Project Approach, Van Horne. TMH
6. Management Information System , O'Brien, TMH
7. Management Information System, Haag, TMH.
8. Management Information System, James O' Brain, Tata McGrawHill.
9. Management Information System, Dharminder Kumar/SUnita, Excel Books, Delhi.
10. Managing With Information, Jerome Kanter, Prentise Hall Of India.
11. Management Information System: managing the digital firm, laudon & laudon, pearson education.
12. Information system for modern management, Murdick, Ross & Clagget, Prentice hall/pearson
13. Business Information System, Muneesh Kumar, Vikas Publishing house.

**PRACTICAL
08BPE201**

PROJECT

**Course/Paper: 08 BPE -201
BPE Semester-VIII**

OBJECTIVE:

The objective of the project work is to enable the students in convenient groups of not more than 3 members on a project involving theoretical and experimental studies related to the branch of study. Every project work shall have a guide who is the member of the faculty of the institution.

The student should select any one of the topics offered from the department or select one on his own duly approved from the department. Candidate is required to submit the detailed synopsis of the work that he would complete in the part-II

Each student shall finally produce a comprehensive report covering back ground information, literature survey, problem statement, project work details and conclusion. This final report shall be typewritten form as specified in the guidelines.

The along with the report of the work already completed.

08BPE 202

SEMINAR

**Course/Paper 08BPE 202
BPE Semester VIII**

OBJECTIVE:The students are to select one technical topic related its branch for Seminar. The student is to submit the synopsis for assessment and approval. Progress for preparation of the seminar topic would be continuously assessed from time to time. Two periods per week are to be allotted and students are expected to present the seminar Progress. A faculty guide is to be allotted and he / she will guide and monitor the progress of the student and maintain the attendance. Students have to give a final presentation for 15 minutes on his topic. Students are encouraged to use various teaching aids such as over head projectors, power point presentation and demonstrative models. This will enable them to gain confidence in facing the placement interviews

08BPE203

STRUCTURES LABORATORY

Course/Paper: 08 BPE -203

BPE Semester-VIII

1. Tensile testing using Universal Testing Machine, Mechanical and optical extensometers, Stress Strain curves and strength tests for various engineering materials.
2. Bending tests, Stress and deflections of beams for various end conditions, verification of Maxwell's and Castiglianos theorems, Influence coefficients.
3. Compression tests on long and short columns, Critical buckling loads, South well plot.
4. Tests on riveted and bolted joints.
5. Test using NDT inspection methods.

BUSINESS POLICY AND STRATEGIC MANAGEMENT (COMPULSORY PAPER)

Course/Paper: 09BMD101

B TECH+MBA Semester-IX

Objective: The objective of the course is to equip the students with analytical tools for cracking case studies by scanning the business environment and coming to a decision. The students will benefit by acquiring new ways and means of developing strategic decision-making skills.

Section-A Business policy-evolution of the concept. Difference between business policy and strategic management. Corporate governance- concept, issues, models, evolution and significance. Introduction to Strategic Management- Concept importance of strategic Management, types of Strategy. Strategy & Competitive Advantage, Strategy Planning & Decisions, strategic Management Process.

Establishing company direction-developing strategic vision, setting objectives and crafting a strategy-Internal, Operating & External Environment, Formulating Long Term objective & Strategy, Strategic Analysis & Choice. Industry and competitive analysis, strategy and competitive advantage, Principles of Competitive Advantage-Identifying Value Activities, Competitive Scope and the Value Chain, the Value Chain and Generic Strategies, Mergers & Acquisitions Strategies.

Strategy Implementation & Structure of strategy, Resource Management and Control, Ethics, Public Values & Social Responsibility

Strategy Evaluation & Control.

Section-B Case Study.

References:

1. Strategic Management, P.K.Ghosh, S.Chand New Delhi.
2. Business Policy & Strategic Management, Dr. S.S. Chawhan, Proff. B.K.Garg. ABD
3. Business Policy & Strategic Management, Azahar Kazmi, TMH N.D..
4. Strategic Planning Formulation of Corporate Strategy, Ramaswamy & Namakumari, Macmillian N.D.
5. Business Policy & Strategic Planning, Tauch & Glueck, Frank Bros & Co
6. Cases in Strategic Management, Amita Mital, Tata Mc Graw Hill.
7. Cases in Strategic Management, Budhiraja, Tata Mc Graw Hill.
8. Business policy & Strategic Management, Nair, Banerjee & Agarwal, Pragati prakashan

OPERATIONS AND PRODUCTION MANAGEMENT

Course/Paper: 09BMD102

B TECH+MBA Semester-IX

Objective: The Course is designed to acquaint the students with decision making in: Planning, scheduling and control of Production and Operation functions in both manufacturing and services; Productivity improvement in operations thought layout engineering and quality management etc; Effective and efficient flow, replenishment and control of materials with reference to both manufacturing and services organizations.

Section-A Operation Management-Introduction. Operation Research and operation strategy, forecasting demand and Linear regression, transportation and assignment problems, allocation of resources.

Nature and Scope of Production Management- process planning and design Facility Location; Types Manufacturing Systems & Layouts; Layout Planning and Analysis Material Handling- Principals-Equipments, Line Balancing-

Problems Operations decisions-Production Planning and Control -In Mass Production in Batch/Job Order Manufacturing.

Capacity Planning -Models, Process Planning-Aggregate Planning-Scheduling Maintenance Management Concepts-Work Study, Method Study, Work Measurement, Work Sampling Work Environment-Industrial Safety; Computer aided Manufacturing (CAM), Artificial Intelligence & expert systems.

Material Management -an Overview, production control, storage and retrieval System. Inventory Control- JIT. Network Techniques-Simulation Concept of total Quality (TQ). International Quality Certification and other standards and their applicability in design manufacturing Humanistic and Marketing Aspects of TQ. Total Quality of services. Total Quality and safety. ERP and Business process engineering maintenance Management, project management-PERT & CPM.

Section-B Case study.

References:

1. Operation Research : Introduction, Taha,Handy A, Delhi, Pearson Education
2. Operation Research - Theory & Applications, J.K.Sharma, Macmillian India Ltd. N.D
3. Production & operation management, S.N.Chary, TMH
4. Production & operation management, Ranjit Singh, Jaipur Publishing.
5. Operation & production Management, K. Aswathapa, Himalaya publication.
6. Operation Research, S.D. Sharma, Kedar Nath & Ram Nath.
7. Production & Operation Management, Nair, Banerjee & Agarwal., Pragati prakashan.

RESEARCH METHODS IN MANAGEMENT

Course/Paper: 09BMD103

B TECH+MBA Semester-IX

Objective: The objective of the course is to enable the students, in developing the most appropriate Methodology for their research studies and to make familiar with the art of using different research methods and techniques. To understand the concept and process of Business research in business environment. To know the use of tools and techniques for exploratory, conclusive and causal research. To understand the concept of measurement in empirical systems & its validity and reliability. To use statistical Techniques for analysis of research data. To realize the applications of Business research

Section –A Concept of Scientific Enquiry - Formulation of Research Problem Hypothesis Building Characteristic and Testing, Review of Literature, Research Design-Exploratory, Descriptive and Experimental research Design. Qualitative Research Design. Data Collection -Sources, Constructing a questionnaire. The Interview, Observation and Survey. Sampling Decisions, Probability and Sampling.

Parametric and Nonparametric test, level of Significance, using software for analysis Grouping and displaying data to convey meaning: Tables and Graphs, measures of Central tendency and dispersion in frequency distributions, Probability distributions, and Testing hypotheses One sample test and two sample tests, chi-square and analysis of variance, Simple regression and correlation, Non-Parametric methods - the sign test for paired data, the rank sums test. The mann-whittney U test, the one sample Runs test, rank correlation.

Attitude Measurement- Motivational Research, Focus Group; Scaling Techniques- Socio Metric and Rating Scale, Scalograms, Internal Consistency Scales. Report Writing Organization Presentation, Bibliography and References. Section-B Cases and Problems.

References:

1. Business Research Method, Cooper Schindler, TMH
2. Research Methodology, C.R.Khothari, New Age Publisher
3. Marketing Research, Beri, TMH
4. Research Methods, Susmit Jain.
5. Marketing Research – Text & Cases, Nargundkar, TMH.
6. Marketing Research within a changing, Hair, TMH.
7. Research Methods For Business: A Skill Building Approach, Sekaran, Wiley, India.

SUMMER TRAINING PROJECT REPORT (COMPULSORY MAJOR PAPER I)

Course/Paper: 09BMD104

B TECH+MBA Semester-IX

Objective: The summer training project report will be evaluated on internal and external basis.

Evaluation and presentation of the report will be done by internal and external Examiners. The student will submit written report and make an oral presentation before a panel of internal examiner (Director/ principal of the institute or his or her nominee) and external examiner (to be appointed by director/principal of the institute from a panel proposed by the board of studies and approved by the vice chancellor of BU.) The assessment of the report and its presentation will be jointly done by the internal and external examiner.

GROUP A - FINANCE

INTERNATIONAL FINANCIAL MANAGEMENT

Course/Paper: 09BMD105

B TECH+MBA Semester-IX

Objective: The new economic environment has changed the total concept of business in the country. Financial markets of the world are increasingly integrating. Financial opportunities have increased manifold across markets. Almost all products and services face global competition. To introduce the environment of international finance and its implications on international business. To explore the sources of long term finance and design financial strategies. To integrate the global developments with the changing business environment in India.

Section A International financial management: Genesis international flow of funds. Developments in international monetary system, Emergence of multinational financial management.

Balance of payment. Risk: political and country risk. Raising capital: Domestic & International Introduction of Financial Management: Functions, Profit V/S Wealth Principle, Foreign Direct Investment.

Parity conditions in International Finance- Purchasing Power Parity, Covered Interest Parity, Real Interest Parity, Parity Conditions and Managerial Implications. Analysis of International Capital Budgeting, Cost of Capital of a Foreign Investment, International financing and investment strategies, managing short term assets and liabilities. Country Risk Analysis.

Section B Case and Problems

References:

1. Multinational Financial Management, Shapiro, PHI N.D.
2. International Financial management, Madhu vij, Excel books, N.D.
3. International Finance, Thomas J. O'Brien.
4. International Financial Management, Apte, Tata Mc Graw Hill.
5. International Financial Management, Eun, Tata McGraw Hill.

GROUP B - MARKETING

INTERNATIONAL MARKETING

Course/Paper: 09BMD106

B TECH+MBA Semester-IX

Objectives: To develop an integrated understanding of International marketing aspects for devising and implementing Global Marketing Strategies.

Section A An Overview to International Business and Trade Theories - Introduction to Marketing Communication, Free Trade v/s Protection, Classical, Modern Theories, Gain and Terms of Trade.

International Business Management - The Economic Environment, Social & Cultural, Political Legal and Regulatory Environment, Competitive Advantage in Global Environment, Market Entry Expansion and Partnership.

International Finance & Institutional Systems - Foreign exchange, Balance of payments, Importing and Exporting, Trade Blocks, International Monetary Fund & World Bank, The Triad and other manner.

Strategic issue for international Marketing - Marketing Information System & Research, Segmentation, Targeting & Positioning, Planning process.

International Marketing Mix Elements - Product Decisions, Pricing Decisions, Marketing channel & place Decision Promotion decisions, Organizing & Controlling.

Section B Case and Problems

References:

1. International Marketing, Yuvraj
2. International marketing, Kothari, Jain, Rbd.
3. International Marketing, Cateora, Tata Mc Graw Hill.
4. Global Marketing, Johansson, Tata Mc Graw Hill.
5. International Marketing, Paul, Tata Mc Graw Hill.

GROUP C - HUMAN RESOURCE MANAGEMENT**STRATEGIC HUMAN RESOURCE MANAGEMENT****Course/Paper:09BMD107****B TECH+MBA Semester-IX**

Objectives: The purpose of this course is to Understand Strategic HRM, Aligning HR systems with business strategy, Strategy formulation, Strategies for performance and development with knowledge of global economy factors. The score card approach is also gaining its importance.

Section A Understanding Strategic HRM: Traditional vs. strategic HR, Typology of HR activities, “best fit” approach vs. “best practice” approach, HR strategy and the role of national context, and organizational context on HR strategy and practices, investment perspective of human resources.

Aligning HR systems with business strategy: Sustained competitive advantage - how HR adds value to the firm - HR as scarce resource – non-substitutable resource, linking HRM practices to organizational outcomes – assessing and reducing costs – behavioral impact of HR practices –linking strategy to HRM practices – corporate HR philosophy and company wide HR standards – HRM leading strategy formulation.

HR Strategy in work force utilization: Efficient utilization of human resource – cross training and flexible work assignment – work teams – non unionization, strategies for employee shortages, strategies for employee surpluses. Strategies for performance and development: Typology of performance types – marginal performers – under achievers – stars – solid citizens, managing employee ability – recruitment and selection strategy typology, incentive alignment, psychological contracting.

Evaluating HR Function: Overview of evaluation – scope – strategic impact – level of analysis – criteria – level of constituents – ethical dimensions, quantitative and qualitative measures – out come and process criteria, balanced score card perspective, bench marking, accounting for HRM – purpose of measuring cost and benefits of HRM – approaches to HRM performances – employee wastage and turn over rates – cost of absenteeism – measuring human resource cost.

Section B Case and Problem

References:

1. Strategic Human Resource Management, Rajiv Lochandhar, Excel books, N.D.
2. Human Resource Strategy A Behavioral perspective for the general Manager, George Dreher, Thomas w Dougherty. Tata Mc Graw Hill.
3. Human Resource Strategy, James W Walker, Tata Mc Graw Hill.
4. Human Resource strategy, Dreher, Tata Mc Graw Hill.
5. Strategic Human Resource: Frameworks for general managers, Baron, Wiley India.
6. Strategic Human Resource management, Schuler, Wiley India.

GROUP A - FINANCE**INVESTMENT MANAGEMENT & SECURITY ANALYSIS****Course/Paper: 09BMD108****B TECH+MBA Semester-IX**

Objective: The focus of Security Analysis is on how others analyze your company’s securities on their own.

Whereas, that of Portfolio Management is on how investors analyze your company’s securities in comparison with other’s on the security market. The course is designed with a view: _To acquaint the students with the working of

security market and principles of security analysis; and _To develop the skills required for portfolio management so as to be able to judge the competitive position of firms in capital market and review the related business decisions.

Section A The Role of Security Markets in Economy. The Organization and Mechanics of Indian Security Markets- Various Securities and their Characteristics, Objective of the Security Analysis, functions of an Organized Security Market, Mechanics of Security Trading.

Various Types of Security Markets and their Functions- Stock Exchanges, Depository. Role of SEBI with regard to Secondary Markets. Capital asset pricing model, arbitrage pricing theory, efficient market hypothesis, technical and fundamental analysis. Concept and trends of savings and investment in India. Stock market: concept, functions, regulations, working and reforms. Instruments of mobilizing investment: Types and characteristics. Comparison of investment options. IPO and secondary markets: reforms and trends, trading mechanism: on line trading, settlement period. Transaction cost in secondary markets, clearing settlement and depositories, integration of stock exchange and consolidation of intermediaries, listing requirements.

Section B

Case and Problems

References:

1. Investment Management & portfolio management, V.K. Bhalla,
2. Security Analysis & portfolio Mgmt., PUnithavan Pandian Security Analysis & Investment Management M.R.Agarwal, Garima Publication.
3. Investment Managemnet, Aswathappa, Himalaya Publication.
4. Investment : An Indian Perspective, Bodie & Mohanty
5. Investment : Analysis & Behaviour, Hirschey, Tata McGraw Hill.

GROUP B - MARKETING

ADVERTISING MANAGEMENT

Course/Paper: 09BMD109

B TECH+MBA Semester-IX

Objectives: The objective of this course is to develop the understanding about the marketing communication tools and implement them in designing Advertisement strategies.

Section A Introduction of Marketing Communication-Overview of marketing communication, Factors affecting the marketing communication mix, Integrated Marketing Communication, Ethical issues in marketing communication.

Marketing Communication Planning-Models of marketing communication, Developing & control of marketing communication, marketing communication-planning procedure. Advertising objectives and planning - Meaning Definition and objectives of Advertising, Types of advertising, The advertising agency: Function & types, Advertising Agency compensation Creative strategy - Target market & creative objective, advertising Appeals, Creative format & creation stage, Copy testing and diagnosis.

Media planning & promotion - Environment analysis media object, Media strategy & media planning modes, Indoor media, out door media, Measuring Advertisement Performances, Current developments in advertising.

Section B Case and Problems

References:

1. Advertisement Management, Batra & others, PHI N.D.
2. Advertisement Management(In Indian Perspective), P.K.Agarwal, Pragati Prakashan.
3. Advertising Sales Promotion & CRM , P.K.Agarwal, Pragati Prakashan.
4. Advertisement Management: Concepts & Cases, Mohan, Tata Mc Graw Hill.
5. Advertising & Promotion, Belch, Tata McGraw Hill.

GROUP C - HUMAN RESOURCE MANAGEMENT

TRAINING AND DEVELOPMENT

Course/Paper: 09BMD110

B TECH+MBA Semester-IX

Objective: The Purpose of this paper is to provide an in-depth understanding of the role of training in the HRD and to enable the course participants to manage the Training system and processes.

Section A Introduction to Training & Development - Training and Training needs Assessment, Training Design and Administration, Training methods, Technique & Aids, Training Strategy Performance Appraisal & Training - Learning through training, Adult Learning (Andragogy), Learning theories and learning Curve, Learning Styles Training Process: An Overview; Role Responsibility and Challenges to Training Managers; Organization and Management of Training Function; Training Needs Assessment and Action Research; Instruction Objectives and Lesson Planning; Learning Process; Training Climate and Pedagogy; Developing Training Modules. Trainer & Training Institutions - Trainers Profile, Types of Training Institutions, Trainer as a change Agent, MDP. Evaluation of Training - Training evaluation & ROI, Trainer of Training, Measurement Tools & Technique, Feedback Mechanism Training Methods and Techniques: Facilities Planning and Training Aids; Organizing the training Department, controlling training, Training Communication; Training Evaluation; Training and Development in India.

Section –B Case Study.

References:

1. Training Instruments for HRD & O.D., Udai Pareek, Tata Mc Graw Hill.
2. Employee Training & Development, Raymond A Noe, The Ohio State University, Tata Mc Graw Hill.
3. Training in Practise, Stephen Truelove, Tata Mc Graw Hill.
4. Employee Training & Development, Noe, Tata McGrawHill
5. Training & Development, Janakiram, Wiley India.

SOCIAL RESPONSIBILITY & BUSINESS ETHICS & LAW

Course/Paper: 10BMD101

B TECH+MBA Semester-X

Objective: This course aims at helping students think about some of the important ethical Implications of the day-to-day happenings and practices of Indian industry and business. It is designed to stimulate discussion and debate rather than to formulate principles, and to raise further questions rather than to dictate answers. The following objectives are underlined: To improve ethical reasoning by correlating moral concepts to business practices - clarification of the values that determine managerial behavior To sensitize the fundamental human values in analyzing social problems and appraising global issues. To recognize the variables in most ethically complex business situations through an understanding of the more subtle criteria for making sound decisions.

Section- A The Concept: The dream of an Indian Style of Management, Abiding Values is Universal, Individualistic: Rational Brain Vs Holistic-Spiritual Brain. Total Quality Mind for Total Quality Management: The Imperative of Human Values. Group Ethics- Ethical Attitudes of Indian Managers, Managers Facing Unethical Management, Ethics & the Organization: Unity: The Basis of Ethics, Science & Ethics, Technology & Ethics, Business Ethics, Normative Ethics, Managing Ethics, Cooperative Ethics, Indian Ethos for Management. Relevance of Gita to Modern Management.

Business Law Indian Contract Act, 1872-Essential Elements of Contract, Void Agreements; Breach of Contracts & Remedies, Amendments. Negotiable Instruments. Act, 1881-Promissory Notes, Cheques, Bills of Exchange Sale of Goods Act, 1930-Contract of Sale, Transfer of Property; Sale by Non-Owner, Performance of Contract. Indian Company's Act, 1956-Meaning and Nature of Company, Kinds of companies, Registration and Incorporation, Share and Share Capital.

Section –B Case study

References:

1. Business Ethics & indian ethos, Dr. G.N. Purohit Dr. Gaurav Bissa, Ajmera Book depot.
2. Business Law & regulatory framework, Dr. S.S.Chawhan & Mohit Sharma, ABD..
3. Business law, Dr. R.L.Nolakha, Ramesh Bk Depot
4. Company law, S.S.Gulshan, Excel Books.
5. Business Ethics, Ronald D Francis, Mukti Mishra, Tata Mc graw Hill.
6. Perspectives of Business Ethics, Laura Hartman & Abha Chatterjee. , Tata Mc graw Hill.
7. An Introduction to Business Ethics, Joseph Des Jardins, Tata Mc Graw Hill.
8. Indian Ethos & Values of Managers, Khandelwal N.M., Pragati Prakashan

Project Management

Course/Paper: 10BMD102

B TECH+MBA Semester-X

GROUP A – FINANCE

MANAGEMENT OF FINANCIAL SERVICES

Course/Paper: 10BMD103

B TECH+MBA Semester-X

Objective: In The Fast Changing Scenario of the Indian Economy, With Deregulation, Competition, Free Market Orientation, And Globalization flows And Outflows of Funds Increased and the FFIs and FIIs have started operations in the Indian financial markets. This course shall enable the student to look into the various perspectives and understand the importance.

Section A Introduction to financial services marketing: Concept of financial services, financial services and GDP, reforms in financial sector, recent issues and challenges in financial services in India. Indian financial system: an overview of Indian financial institutions, types of financial services – fund and fee based. An overview of the different activities performed by a bank. Risk in financial services and changing perception of intermediaries regarding financial services.

Capital markets: government securities market, monetary money market.

Merchant banking: nature and scope, regulation, overview of current Indian merchant banking scene-structure of merchant banking industry, primary market in India and abroad, SEBI guidelines, pricing and timing of public issues, pre-issue management-advertising and marketing, post issue management-rights issues.

Introductory, conceptual, evaluation, marketing and legal aspects of the following financial services: Lease, Hire purchase, consumer finance, factoring, bill financing, credit cards.

Section B Case and Problems

References:

1. Financial Markets & Services, Gorden Natrajen, Himalaya Publication
2. Marketing of Fianacial Services, jain rathi thakur solanki, RBD, jaipur.
3. Financial Services, tripathy, PHI.
4. Financial Institutions & markets, kohn, oxford.
5. Financial markets & financial services, vasant desai, Himalaya publication.

GROUP B - MARKETING

SALES & DISTRIBUTION MANAGEMENT

Course/Paper: 10BMD104

B TECH+MBA Semester-X

Objectives: To provide an understanding of the concepts, attitudes, techniques and approaches required for effective decision making in the areas of Sales and Distribution. To pay special emphasis on the practicing manager's problems and dilemmas. To develop skills critical for generating, evaluating and selecting sales and distribution strategies.

Section A The Sales Management - Introduction to sales management and sales organization, Sales function & policies, Personal selling - nature, scope & objectives, Formulating Personal selling strategy.

Planning the Sales Effort - Sales planning and Budgeting, Estimating Market Potential and Sales forecasting, Setting the sales territory & quotas, Sales and cost Analysis.

Organizing and Directing the sales Force - Recurring and training sales personnel, Designing & compensating sales Personnel, Motivating and Leading the sales force, Evaluating sales force performance.

Distribution Management - Managing marketing logistics & channels, Channel Integration - VMS, HMS, Channel Management, and Marketing channel Policies & legal issue.

Channel Institutions & control, Wholesaling &- Retailing, Channel Information systems, Managing & Evaluating Channel Performance Case & future trends in sales & distribution management.

Section B Case and Problems

References:

1. Sales Management, Still & Cundiff, Pearson Pentrice Hall.
2. Sales & Distribution Management, Hawalder, TMH.
3. Sales & Distribution Management,Panda.

4. Sales & Distribution Management, G.S. Sudha. RBD.
5. Sales & Distribution Management, Nair, Banerjee & Agarwal, Pragati Prakashan.
6. Sales & Distribution Management, P.K.Agarwal, Pragati Prakashan.

GROUP C - HUMAN RESOURCE MANAGEMENT

LEADERSHIP SKILLS AND CHANGE MANAGEMENT

Course/Paper: 10BMD105

B TECH+MBA Semester-X

Objectives: The course will let the student understand the impact and importance of becoming a leader, effective leadership behaviour and styles. Understanding the change, its role and implementation

Section A The nature and importance of leadership: The meaning of leadership – leadership as a partnership – leadership vs. management – the Impact of leadership on organizational performance – leadership roles – the satisfactions and frustrations of being a leader. Traits, Motives, and characteristics of leaders: Personality traits of effective leaders’ leadership motives-cognitive factors and leadership.

Effective leadership behaviour and attitudes: task-related attitudes and behaviours – relationship-oriented attitudes and behaviours – super leadership: leading others to lead themselves – 360-degree feedback for fine-tuning leadership approach.

Leadership styles: the leadership continuum: classical leadership styles – the boss-centered vs. employee-centered leadership continuum – the autocratic participative free rein continuum- the leadership grid styles – the entrepreneurial leadership style – gender differences in leadership style – selecting the best leadership style.

Understanding change: nature of change – forces of change – perspective on change: contingency perspective – population ecology perspective institutional perspective – resource-dependence perspective

Types of change: continuous change – discontinuous change – participative change – directive change.

Implementing change: assemble a change management team – establish a new direction for change – prepare the organization for change ,systems and resources to support change – identify and to remove road blocks to change – absorb change into the culture of the organization

Section B Case and Problems

References:

1. Leadership: Enhancing The Lessons of Experience, Richard L Huges, Robert c Ginnette, Gordon J Curphy, Tata McGraw Hill.
2. Leaders & the leadership process, Jon Pierce & John Newstorm, Tata McGraw Hill.
3. Art of Leadership, George Manning, Kent Curtis, Tata McGraw Hill.
4. Leadership, Hughes, tata Mc Graw Hill
5. Leadership Research Findings, Practise & Skills, DuBrin, Wiley India.
6. Practising Leadership Principles & Applications, Shriberg, Wiley, India.

GROUP A – FINANCE

FINANCE FOR STRATEGIC DECISIONS

Course/Paper: 10BMD106

B TECH+MBA Semester-X

Objective:

The modern industrial or service firm must conduct its business in a rapidly changing and highly competitive environment. A premium is placed on the ability to react quickly and correctly to constantly changing market conditions. The objective of the course is to make student aware of the strategic decisions to be undertaken to familiarize with finance function.

Section A

An Overview of the Financial System- Saving and Investment, Money, Inflation & Interest, Banking and Non Banking Financial Intermediaries.

Financial Markets and Instruments- Money market and Capital Markets, Financial Instruments: REPO, Equities, Bonds, Derivatives etc. Characteristics of Financial Instruments:

Central Banking, Monetary Policy & Regulation- The RBI as a Central Bank: Structure, Functions and Working, Reforms, the Current Regulatory Structure. Concept of strategic decisions-changing global economic environment. Theory of Merger & Acquisition. Strategic decisions regarding securitization factoring and forfeiting,

Section B

Case and Problems

References:

1. Finance for Strategic Decision, Jain & Rathi, RBD.
2. Financial Markets & Corporate Strategy, Grinblatt, Tata McGraw Hill.
3. Capital Markets, GuruSamy, TataMc Graw Hill.
4. Financial Services, Guruswamy, Tata McGraw Hill.

GROUP B - MARKETING

PRODUCT & BRAND MANAGEMENT

Course/Paper: 10BMD107

B TECH+MBA Semester-X

Objectives: To help the students appreciate the relationship between Corporate Strategy and Product and Brand Management. To equip the students with the various dimensions of product management such as product-line decisions, product platform and product life cycle. To provide a framework to understand the new product development process, the organizational structures for new product development and product management functions within an organization-To explore the various issues related to Brand Management and to enhance the understanding and appreciation of this important intangible strategic asset including brand associations, brand identity, brand architecture, leveraging brand assets, brand portfolio management etc.

Section A Introduction to Product Management - What is Product & Product - Service Continuum, Individual Product Decisions, Product attributes, Product and product Lives, Special issues in Product Management - Product Life cycle & Strategy, Product Differentiation, New Product development.

Introduction to Brand Management and Crafting of Brand Elements. Consumer Brand Knowledge. Brand Identity, Personality and Brand Associations. Managing Brand Architecture and Brand Portfolios. Corporate Branding and Tools for Building Brand Equity. Leveraging Brand Equity. Measurement of Brand Equity.

Brand as a Concept - Value & Significance of Brand, Brand Name, Symbol & Slogan, Brand Strategic Decision, Line Expensing & Brand Extension

Concept of Brand Equity & Association - Brand Loyalty; Awareness, Creating and Managing Brand Equity, Selecting, Creating and Maintain Associate.

Brand Strategic - Brand Rejuvenation, Brand Relations, Brand Proliferation, Multi Branding, Global Brand.

Section B Case and Problems

References:

1. Managing Indian Brands, Ramesh Kumar, Vikas Pub. N.D.
2. Product & Brand Management, Sharma Pareek, Ramesh Book Depot.
3. Product Development & Design, tarun soota, Pragati Prakashan.
4. Product Management, Anandan, Tata Mc Graw Hill.
5. Product Management, Lehmann, tata mc graw hill.
6. Product Design & Development, Ulrich, Tata Mc Graw Hill.

GROUP C - HUMAN RESOURCE MANAGEMENT

HUMAN RESOURCE PLANNING

Course/Paper: 10BMD108

B TECH+MBA Semester-X

Objectives: To understand the purpose, process and applications of human resource planning in the context of different organizational strategies. To create a critical appreciation and knowledge of understanding the determinants of human resource requirements. And the means for meeting those requirements. To create practical awareness about the current trends in human resource planning in global companies.

Section A Introduction: definition and concept of HRP, benefits, process. HRP components.

HR planning and corporate strategies: HR planning as a strategic process-employees as resources-goal attainment, linking HR process to strategy, involvement in strategic planning process, strategic HR Planning model, staffing system.

Job analysis: meaning and definition, job analysis process, techniques of job analysis, methods and practice of job analysis, competency based approach.

HR Forecasting: Forecasting Manpower Needs, the Forecasting Process, Inventorying available talent, Projecting Future Talent Supply, forecasting Staffing Requirements. Index analysis-expert forecasts-delphi technique-nominal group technique-HR budget and staffing table, scenario forecasting, regression analysis.

Career planning and succession management: definitions, concepts, stages of career development process and organizational HR Policies, career processes Succession management process and Management development programmes, objectives of MDP's, Job rotation, Auditing MDP's management development methods, challenges of succession management, Replacement analysis.

Section B Case and Problems

GROUP A – FINANCE

BANKING SERVICES & OPERATION

Course/Paper: 10BMD109

B TECH+MBA Semester-X

Objective: The objective of the course is to develop the skills required for understanding India's most challenging and important financial services sector. Banking services operation will enable the management student to have an insight to the banking sector and how it works.

Section A Indian financial system: the financial system – nature – evolution and structure – the functions of financial intermediaries – financial instruments – the role of financial system in economic development the Indian financial system.

Deposit products: types of bank deposits, deposit schemes, composition of bank deposits. Credit policy: Need for credit policy, credit policy components of credit policy, credit policy pursued by the government. Retail banking: basics of retail banking, forms of retail banking. Corporate banking: The nature of corporate banking, loan syndication.

Rural banking and Micro finance: sources of rural finance, credit delivery mechanism in rural finance to cooperative agricultural and rural development banks (CARDDB) – regional rural banks (RRBS), service area approach (SAA) – National Bank for Agriculture and Rural Development (NABARD), microfinance.

Fee-based services: the fee-based services of banks, letter of credits, bank guarantees.

Introduction to banking operations: Importance of customer relationship management in banks – different types of products and services offered to customers – role of technology in banking operations Introduction to electronic banking.

Section B Case and Problems

References:

1. Banking Service & Operation, Jain & Rathi Sharma, RBD, Jaipur.
2. Banking theory Law & Practise, Gurusamy, Tata Mc Graw Hill.
3. Merchant Banking & Financial services, Gurusamy, Tata Mcgraw Hill.
4. Banking & Financial System, B.L.Ojha, Ajmera Book Company.
5. Financial Services, M.Y.Khan, Tata Mc Graw Hill.

GROUP B - MARKETING

MARKETING OF SERVICES

Course/Paper: 10BMD110

B TECH+MBA Semester-X

Objectives: Planning and implementing the marketing strategy for service products requires a different sort of approach, which is different from the traditional goods marketing. The objective of this course is to acquaint the

students to the uniqueness of the services characteristics and its marketing implications. The intent of the course is to discuss measure and analyze several facets in the area of services marketing essential for the success of a service sector firm.

Section A Introduction to Service Marketing - Understanding Service, The Nature of Service Marketing, Classification of service. Service Consumer Behavior - Understanding Consumer Behaviors, Customer expectations & perceptions, managing & exceeding customer service exportations, Strategic for influencing customer perception. Strategic Issues in Services Marketing - Market Segmentation & Targeting; Individualized Service and Mass Customization, Differentiation and Positioning of Services; Steps in developing a positioning strategy, Developing and maintaining demand & capacity.

The marketing mix and services - The marketing mix dements, Traditional marketing mix -Product, price place, promotion & communication services, extended marketing mix – people, process physical evidence in services.

Challenges of service marketing - Developing & managing the customer service function, Marketing planning for service; Developing & maintain quality ill services, Relationship marketing, Service marketing - specific Industries, Tourism, Travel, Transportation service marketing, financial services; Education & Professional service, Telecom & Courier, Media Service.

Section B Case and Problems

References:

1. Service marketing, Lovelock, Pearson Education N.D.
2. Services Marketing: Text & Cases, Nargundkar, Tata Mc Graw Hill.
3. Service Marketing, Zeithaml, Tata Mc Graw Hill.

GROUP C - HUMAN RESOURCE MANAGEMENT

PERFORMANCE MANAGEMENT & RETENTION STRATEGIES

Course/Paper: 10BMD111

B TECH+MBA Semester-X

Objectives:

The objective of this paper is to introduce the basic concept of performance management and to widen the knowledge of the students in selecting and implementing the various performance measurement methods for better designing of reward system associated with it.

Section A Performance Appraisal – A Conceptual Framework, Concept & Definitions of performance appraisal, and Objectives of performance appraisal: Process of performance appraisal, Performance Appraisal v/s Performance Management System, Concept of performance management, Process & elements Of performance management. Behavioral Performance Management - Learning Theories; Principles of Learning: Reinforcement and Punishment, Role of Organizational Reward Systems, Behavioral Performance Management or OB Mod.

Potential Appraisal & HRD - Meaning & objectives of Potential Appraisal, Potential Appraisal & Performance Appraisal, Concept of HRD; Objectives and challenges of HRD Mechanisms and HRD outcomes.

Performance Planning & Measuring Performance - Meaning & need or Performance Planning, Planning Individual Performance, Principles of Measurement.; Classification of Performance Measures, Measurement issues; Approaches &: tools to measure organizational performance, Traditional and modern performance appraisal methods

Competency Analysis and Competency Mapping - Meaning of competency, Competency Analysis and Approaches to competency Analysis, Competency mapping; Need development and assessment of competency models, Competency and performance, Tools to identify the competencies of the employees.

Section B Case and Problems

References:

1. Performance management, Dixit Varsha, Vrinda Publication.
2. Performance Appraisal & Compensation Management: A Modern Approach, Goel, PHI.