<u>PEOPLE'S UNIVERSITY, BHOPAL</u> (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

Subject Code	Subject Title	C	Cred	it		Theory			Practical		
DPE14011	E-Commerce and E- Business	L	Т	Р	External (70)	Internal	nternal (100)	External	Internal	Total	
		3	1	-		(30) Min: 40 (D Grade)	(Nil)	(Nil)	(Nil)		

Duration of Theory (Externals): 3 Hours

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

Pre-Requisite	Nil
	1. To understand technical aspect of E-commerce and E-Business.
Course Outcome	2. To describe the process of E-commerce and E-business.
	3. To understand Infrastructure design issues of E-commerce.

Unit	Contents (Theory)	Marks Weightage
Ι	Introduction of E- Commerce: Definition of E-com, Different types of E-com, E-commerce	
	trade cycle, Advantages and disadvantages of E-commerce, Traditional commerce Vs E -	14
	commerce.	
Π	Overview Of Hardware And Software Technologies Of E-Commerce: Client side	
	programming (Dream weaver, Front page), Server side programming (PHP), Database	14
	connectivity, Session tracking, Middleware technologies from e com.	
III	Payment System Of E-Commerce: Traditional payment model, Characteristics of payment,	
	System, SET Protocol for credit card payment, E-cash, E-check, Smart cards.	14
IV	Introduction To E Business: Definition of E-business, Characteristics, Elements of E-business,	
	roles, Impact of E-business, Challenges of E-business.	14
V	Developing E Business-Models: E-business structure, Evolution of E-business and its business	
	models stages, Characteristics of Internet based software and E-business solutions.	14

Text Book/References Books/ Websites

1. Henry Chan; E-Commerce Fundamentals and application; Wiley publication

2. Dave Chaffey: E -business and E - commerce Management; Pearson, 3rd edition

Suggested List of Laboratory Experiments :- (Expandable):Nil

Semester –IV

Semester –IV

<u>PEOPLE'S UNIVERSITY, BHOPAL</u> (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

Subject Code	Subject Title	0	Cred	it		Theory		Practical		
DPE14012	Rural Technology & Community Development	L	Т	Р	Entonnol	Internal	Total (100)	External	Internal	Total
		3	1	-	External (70)	(30) Min: 40 (D Grade)	Min: 40 (D Grade)	(Nil)	(Nil)	(Nil)

Duration of Theory (Externals): 3 Hours

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

Pre-Requisite	Nil
	1. To understand rural areas problems.
Course Outcome	2. To describe the process by which we improve the living conditions of rural India.
	3. To understand how we help community of rural areas.

Unit	Contents (Theory)	Marks Weightage
Ι	Introduction; Introduction to rural technology, Technology for natural resources development and conservation, Technology for rural livelihood development, Technology for infrastructure.	14
II	Rural Energy Planning: Energy sources - conventional, Non-conventional-wind, Bio-gas, Solar; Energy audits: Energy conversion & conservation program, Elements of energy accounting, Energy planning, Demand and supply forecasting.	14
III	Housing: Housing in rural areas, Rural housing programmes, low cost housing appropriate technologies in rural housing, Drinking water supply: Sources problems, Programmes to solve drinking water problems, Problems of sanitation in rural areas low cost toilets.	14
IV	Rural Community Facilities & Services: Types of community facilities and services: water, Sanitation, Electricity, Provider of community facilities, Government, Non-governmental organizations, Philanthropic organization.	14
V	Various Program Under Community Facilities and Services; Various models in providing drinking water and sanitation in India, Rural transportation system - modes of transportation - rural economy, Rural health care and delivery systems.	14

Text Book/References Books/ Websites

1. Vikram Singh ; Rural Development in India; Satyam Law International.

2. Katar Singh; Rural Development Principle Policies & Management;

3. Jerry W. Rabinson; Introduction to Community Development; SAGE.

4. Rhonda Phillips, Robert H. Pittman; An Introduction to Community Development; Taylor & Fransis

Suggested List of Laboratory Experiments :- (Expandable):Nil

Semester –IV

PEOPLE'S UNIVERSITY, BHOPAL (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

Subject Code	Subject Title	(Credit		Theory			Practical		
DDE14013	Waste	L	Т	Р	External	Internal	Total (100)	External	Internal	Total
DPE14013	Management	3	1	-	(70)	(30)	$\begin{array}{c} \text{(100)} \\ (1$	(Nil)	(Nil)	(Nil)

Duration of Theory (Externals): 3 Hours

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

Pre-Requisite	Nil
	1. Ability to understand about basic concept of waste management.
Course Outcome	2. Ability to understand about recycling of various wastes.
	3. Ability to understand about waste collection, handling and disposal.

Unit	Contents (Theory)	Marks Weightage
Ι	Introduction: Definition, Various sources, Types of waste, Problem associated with waste, Effects of waste- on society, On human health, On animals, Recycling of waste.	14
II	Municipal & Solid waste: Definition-Sources of solid waste, Types of solid waste, Composition of solid waste, Collection methods and techniques of solid waste, Industrial & agricultural waste.	14
III	Hazardous & E-waste : Definition- sources of hazardous waste, Collection of hazardous waste, Medical waste & Nuclear waste, disposal method and treatment, Definition- sources of E-Waste, E-waste – non-recycling impacts, Recycling of E-waste.	14
IV	Collection, Treatment & Disposal: Methods of residential and commercial waste collection, Collection vehicles, Manpower, Segregation & composting of solid wastes, Method & techniques for treatment of solid waste.	14
V	Disposal of Solid Wastes: Refuse disposal systems, Incinerations, Principle features of an incinerator, Site selection and plant layout of an incinerator, Sanitary landfill, Advantages and disadvantages of sanitary land fill - site selection, Dumping-open & sea dumping.	14

Text Book/References Books/ Websites

Jagbir Singh, AL. Ramanathan; Solid Waste Management; Present and future challenges; I.K. International 1. Publishing House Pvt Ltd

George Tchobanoglous and Hillary theisen ; Samuel Vigil ; Integrated solid waste management, McGraw Hill. 2. 3.

T. V. Ramachandra; Management of Municipal Solid Waste; TERI press.

Suggested List of Laboratory Experiments :- (Expandable): Nil

Semester –IV

<u>PEOPLE'S UNIVERSITY, BHOPAL</u> (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

Subject Code	Subject T	itle	Credit			Theory			Practical			
DCE1402	Transportation		LTI		Р	External	Internal	Total (100)	External	External Intern (Nil) (Nil)	Internal	Total
DCE1402	EnggI	3	1	-	(70)	(30)	Min: 40 (D Grade)	(Nil)	(Nil)			
Duration of	Duration of Theory (Externals): 3 Hours											
Theory Intern	al- Max Mar	:ks: 30)			Best of Two	Mid Semes	ter Test -	Assignmen	t/Quiz/Atte	ndance -	
						Max Marks: 15			Max. Marks: 15			
Practical Inter	rnal Max Ma	rks: N	Jil			Lab work & Sessional -			Assignment/Quiz/Attendance -			
						Max Marks: Nil			Max. Marks: Nil			
Pre-Requisite	Nil											

Pre-Requisite	Nil
Course Outcome	1. Student should able to know modes of transportation system.
	2. Student should able to know super elevation, limits of Super elevation on curves.
	3. Student should able to know RCC girder bridge, pre-stressed girder bridge.

Unit	Contents (Theory)	Marks Weightage
Ι	Overview Of Transportation Engineering : Modes of transportation system – roads, Railway, Airways, Waterways, Importance of each mode, Comparison and their relative merits and demerits, Necessity & importance of cross drainage works for roads & railways.	14
п	Railway Engineering : Alignment and gauges, Classification of Indian Railways, zones of Indian Railway. Alignment- Factors governing rail alignment, Rail gauges – types, Factors affecting selection of gauge, Rail track cross sections – standard cross section of BG & M.G Single & double line in cutting and embankment, Permanent ways. Station and Yards: Site selection for railway stations, Requirements of railway station, Types of stations.	14
Ш	 Ideal Requirement, Component Parts: Rails: function & its types. Rail Joints – requirements, types. Creep of rail: causes & prevention of creep. Sleepers: functions & Requirement and types, sleeper density. Ballast: function & different types with their properties, relative merits & demerits. Plates: fish Plates, keys. Rail Fixtures & Fastenings: Coning of wheels, tilting of rails, Gradient & its types, Super elevation, limits of Super elevation on curves, Cant deficiency, negative cant, and grade compensation on curves. Branching of Tracks. Definition of point & crossing, Deficiencies in Rail, wear of rail. Rail Creep. 	14
IV	Tunnel Engineering : Definition, Necessity, Advantages, Disadvantages, Classification of tunnels, Shape and size of tunnels, Tunnel investigations and surveying –Tunnel surveying locating center line on ground, transferring center line inside the tunnel. Shaft – its purpose & construction, Methods of tunneling in soft rock, Methods of tunneling in hard rock –Types of explosives used in tunneling, Tunnel lining and ventilation.	14
V	Bridge Engineering : Site selection and investigation Factors affecting selection of site of a bridge. Bridge alignment Component parts of bridge. Plan & sectional elevation of bridge showing component parts of substructure & super structure Foundation – function, types Piers-function, requirements, types of Abutment, RCC girder bridge, pre-stressed girder bridge, cantilever, and suspension bridge. Inspection & Maintenance of Bridge - Inspection of bridges, Maintenance of bridges & types, routine & special maintenance.	14

<u>PEOPLE'S UNIVERSITY, BHOPAL</u> (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

Semester –IV

Text Book/References Books/ Websites

- 1. Birdi & Ahuja ; Road, Railway and Bridges, ; Birdi & Ahuja. Std. Book House.
- 2. S.C. Saxena; Railway Engineering, ; Dhanpatrai & sons Pvt. Ltd Mumbai.
- 3. S.C. Rangwala ; Principles of Railway Engineering, ; Charotar Publication.
- 4. D. Johnos Victer ; Elements of Bridges ; Oxford & IBH Publishing co.

Koved trion headening count Suggested List of Laboratory Experiments :- (Expandable): Nil

School of Research and Technology

Semester –IV

PEOPLE'S UNIVERSITY, BHOPAL (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

Subject Code	Subject Title	C	redit			Theory		Practical		
DCE1403	Structural Design & Drawing-I (RCC)	L	Т	Р	Evtornol	Intornal	Total (100)	Extornal	Intornal	Total (50)
		3	1	1	(70)	(30)	Min: 40 (D Grade)	(35)	(15)	Min: 20 (D Grade)
Duratio	Duration of Theory (Fytomole): 3 Hours									

Duration of Theory (Externals): 3 Hours

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

Pre-Requisite	Nil
	1. Student should able to know purpose of reinforcement.
Course Outcome	2. Student should able to know assumptions of WSM, ULM and LSM.
	3. Student should able to know concept of Pre-stressed Concrete.

Unit	Contents (Theory)	Marks Weightage
Ι	Introduction To RCC: S.I. Units, Meaning of R.C.C. Purpose of reinforcement, Materials of reinforcement steel as a reinforcing material, Types of steel used for reinforcement mild steel, Tor steel, Permissible stresses in concrete and steel, Different mixes of concrete to be used for R.C.C. Work use of I.S. code No. 456-2000 and I.S. 875-1984 for designing R.C.C. Structures, Advantages and disadvantages of RCC.	14
П	Working Stress Method & Ultimate Load Method (ULM): Assumptions of W.S.M&ULM Equivalent bending stress distribution diagram for singly reinforced section, Concept of under-reinforced, Over-reinforced and balanced section, Neutral axis co-efficient Simple numerical problems on determining design constants, Moment of resistance and area of steel for singly & doubly reinforced beam.	14
Ш	Limit State Method : Assumption of LSM Analysis And Design Of Singly & Doubly Reinforced Sections (LSM): General features, Necessity of providing singly & doubly reinforced section reinforcement, T beam and slab, One way and two way slab.	14
IV	Design Of Axially Loaded Column And Footing (LSM): Classification of columns, Effective length of column, Specification for minimum reinforcement, Cover, maximum reinforcement, Number of bars in rectangular, Square and circular sections, Diameter and spacing of lateral ties.	14
v	Pre-stressed Concrete: Concept of Pre-stressed Concrete, Externally and internally Pre- stressed member and advantages and disadvantages of pre-stressed concrete and difference between pre-stressed concrete and RCC structure and numerical problem.	14

Text Book/References Books/ Websites

- 1. Dr. V.L. Shah & Late Dr. S.R. Karve, Limit State Theory & Design of Reinforced Concrete Structure.
- 2. N.C. Sihna & S.K. Roy, Fundamentals of Reinforced concrete, S.Chand & Company.
- 3. N.Krishna Raju R.N. Pranesh, Reinforced concrete Design (IS 456-2000) ,Principles & Practice New Age

Suggested List of Laboratory Experiments :- (Expandable):

School of Research and Technology

<u>PEOPLE'S UNIVERSITY, BHOPAL</u> (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

Semester –IV

- 1. To determine the bending moment in given beam by using deference forces.
- 2. To determine the horizontal and vertical reaction in given continuous beam by using deference forces.

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- 3. To determine the ultimate moment in given T- beam by using deference forces.
- 4. Analysis the given one way slab for deflection.
- 5. Analysis the given column for axial load.

School of Research and Technology

Semester –IV

<u>PEOPLE'S UNIVERSITY, BHOPAL</u> (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

Subject Code	Subject Title		Crec	lit	Theory			Practical		
DCE1404	Advance	L T P Ext		External	xternal Internal		External	Internal	Total (50)	
	Surveying	3	1	1	(70)	(30)	Min: 40 (D Grade)	(35)	(15)	Min: 20 (D Grade)

Duration of Theory (Externals): 3 Hours

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

Duration of Theory (Externals): 3 Hours

Pre-Requisite	Nil
	1. Student should able to know electronic digital theodolite.
Course Outcome	2. Student should able to know remote sensing system- passive system.
	3. Student should able to know use of theodolite as a Tacheometer.

Image:	Unit	Contents (Theory)	Marks						
I Advanced Survey Equipments: Construction and use of one second, Micro optic theodolite, Electronic digital theodolite, Features of electronic theodolite, Principle of E.D.M, Components of E.D.M and their functions, Use of E.D.M, Total station. 14 II Theodolite Survey: Components of transit theodolite and their functions, Technical terms used, Temporary adjustments of transit theodolite, Swinging the telescope, Transiting, Changing the face, Measurement of horizontal angle, Method of repetition, Errors eliminated by method of repetition, Measurement of deflection angle, Measurement of vertical angle, Measurement of magnetic bearing of a line by theodolite. Prolonging a straight line. 14 III Traversing with Theodolite – Method of included angles, Locating details, Checks in closed traverse, Calculation of bearings from angles, Traverse computation - Latitude, Departure consecutive co-ordinates error of closure, Distribution of a angular error, Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic. 14 IV Aerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing – introduction, Electro-magnetic energy, Remote sensing system passive system, Active system, Applications – mineral, land use / land cover, Natural hazards and environmental engineering system. 14 V Use of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topic. 14			Weightage						
I theodolite, Electronic digital theodolite, Features of electronic theodolite, Principle of E.D.M, Components of E.D.M and their functions, Use of E.D.M, Total station. 14 II Theodolite Survey: Components of transit theodolite and their functions, Technical terms used, Temporary adjustments of transit theodolite, Swinging the telescope, Transiting, Changing the face, Measurement of horizontal angle, Method of repetition, Errors eliminated by method of repetition, Measurement of deflection angle, Measurement of vertical angle, Measurement of magnetic bearing of a line by theodolite. Prolonging a straight line. 14 III Traversing with Theodolite - Method of included angles, Locating details, Checks in closed traverse, Calculation of bearings from angles, Traverse computation - Latitude, Departure consecutive co-ordinates error of closure, Distribution of a angular error, Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic. 14 IV Aerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing - introduction, Electro-magnetic energy, Remote sensing system, Passive system, Active system, Applications - mineral, land use / land cover, Naural hazards and environmental engineering system. 14 V Ves of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometry, Essential requirements of tacheometer, Use of theodolite as a Tacheometeric constants, Simple numerical problems on above topic. 14		Advanced Survey Equipments: Construction and use of one second, Micro optic							
E.D.M, Components of E.D.M and their functions, Use of E.D.M, Total station.IITheodolite Survey: Components of transit theodolite and their functions, Technical terms used, Temporary adjustments of transit theodolite, Swinging the telescope, Transiting, Changing the face, Measurement of horizontal angle, Method of repetition, Errors eliminated by method of repetition, Measurement of deflection angle, Measurement of vertical angle, Measurement of nagnetic bearing of a line by theodolite. Prolonging a straight line.14IIITraversing with Theodolite - Method of included angles, Locating details, Checks in closed traverse, Calculation of bearings from angles, Traverse computation - Latitude, Departure consecutive co-ordinates error of closure, Distribution of a angular error, Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic.14IVAerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing - introduction, Electro-magnetic energy, Remote sensing system, Passive system, Active system, Applications - mineral, land use / land cover, Natural hazards and environmental engineering system.14VTacheometric Survey: Principle of tacheometry, Essential requirements of tacheorneter, Use of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topics.14	Ι	theodolite, Electronic digital theodolite, Features of electronic theodolite, Principle of							
IITheodolite Survey: Components of transit theodolite and their functions, Technical terms used, Temporary adjustments of transit theodolite, Swinging the telescope, Transiting, Changing the face, Measurement of horizontal angle, Method of repetition, Errors eliminated by method of repetition, Measurement of deflection angle, Measurement of vertical angle, Measurement of magnetic bearing of a line by theodolite. Prolonging a straight line.14IIITraversing with Theodolite - Method of included angles, Locating details, Checks in closed traverse, Calculation of bearings from angles, Traverse computation - Latitude, Departure consecutive co-ordinates error of closure, Distribution of a angular error, Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic.14IVAerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing – introduction, Electro-magnetic energy, Remote sensing system, passive system, Active system, Applications – mineral, land use / land cover, Natural hazards and environmental engineering system.14VVSe of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topics.14		E.D.M, Components of E.D.M and their functions, Use of E.D.M, Total station.							
IIused, Temporary adjustments of transit theodolite, Swinging the telescope, Transiting, Changing the face, Measurement of horizontal angle, Method of repetition, Errors eliminated by method of repetition, Measurement of deflection angle, Measurement of vertical angle, Measurement of magnetic bearing of a line by theodolite. Prolonging a straight line.14IIITraversing with Theodolite – Method of included angles, Locating details, Checks in closed traverse, Calculation of bearings from angles, Traverse computation - Latitude, Departure consecutive co-ordinates error of closure, Distribution of a angular error, Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic.14IVAerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing – introduction, Electro-magnetic energy, Remote sensing system passive system, Active system, Applications – mineral, land use / land cover, Natural hazards and environmental engineering system.14VVGenemetric Survey: Principle of tacheometry, Essential requirements of tacheorneter, Use of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topics.14		Theodolite Survey: Components of transit theodolite and their functions, Technical terms							
IIChanging the face, Measurement of horizontal angle, Method of repetition, Errors eliminated by method of repetition, Measurement of deflection angle, Measurement of vertical angle, Measurement of magnetic bearing of a line by theodolite. Prolonging a straight line.14IIITraversing with Theodolite - Method of included angles, Locating details, Checks in closed traverse, Calculation of bearings from angles, Traverse computation - Latitude, Departure consecutive co-ordinates error of closure, Distribution of a angular error, Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic.14IVAerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing - introduction, Electro-magnetic energy, Remote sensing system- passive system, Active system, Applications - mineral, land use / land cover, Natural hazards and environmental engineering system.14VUse of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topics.14	П	used, Temporary adjustments of transit theodolite, Swinging the telescope, Transiting,							
II eliminated by method of repetition. Measurement of deflection angle, Measurement of vertical angle, Measurement of magnetic bearing of a line by theodolite. Prolonging a straight line. III III Traversing with Theodolite - Method of included angles, Locating details, Checks in closed traverse, Calculation of bearings from angles, Traverse computation - Latitude, Departure consecutive co-ordinates error of closure, Distribution of a angular error, Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic. I4 IV Aerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph. Remote sensing – introduction, Electro-magnetic energy, Remote sensing system passive system, Active system, Applications – mineral, land use / land cover, Natural hazards and environmental engineering system. I4 V Use of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topics. I4		Changing the face, Measurement of horizontal angle, Method of repetition, Errors	14						
vertical angle, Measurement of magnetic bearing of a line by theodolite. Prolonging a straight line. Image: straight line. III Traversing with Theodolite - Method of included angles, Locating details, Checks in closed traverse, Calculation of bearings from angles, Traverse computation - Latitude, Departure consecutive co-ordinates error of closure, Distribution of a angular error, Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic. 14 IV Aerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing - introduction, Electro-magnetic energy, Remote sensing system passive system, Active system, Applications - mineral, land use / land cover, Natural hazards and environmental engineering system. 14 V Use of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topics. 14		eliminated by method of repetition, Measurement of deflection angle, Measurement of							
straight line.Image: straight line.IIITraversing with Theodolite - Method of included angles, Locating details, Checks in closed traverse, Calculation of bearings from angles, Traverse computation - Latitude, Departure consecutive co-ordinates error of closure, Distribution of a angular error, Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic.14IVAerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing - introduction, Electro-magnetic energy, Remote sensing system passive system, Active system, Applications - mineral, land use / land cover, Natural hazards and environmental engineering system.14VTacheometric Survey: Principle of tacheometry, Essential requirements of tacheorneter, Use of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topics.14		vertical angle, Measurement of magnetic bearing of a line by theodolite. Prolonging a							
IIITraversing with Theodolite - Method of included angles, Locating details, Checks in closed traverse, Calculation of bearings from angles, Traverse computation - Latitude, Departure consecutive co-ordinates error of closure, Distribution of a angular error, Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic.14IVAerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing - introduction, Electro-magnetic energy, Remote sensing system- passive system, Active system, Applications - mineral, land use / land cover, Natural hazards and environmental engineering system.14VTacheometric Survey: Principle of tacheometry, Essential requirements of tacheorneter, Use of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topics.14		straight line.							
IIIclosed traverse, Calculation of bearings from angles, Traverse computation - Latitude, Departure consecutive co-ordinates error of closure, Distribution of a angular error, Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic.14IVAerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing – introduction, Electro-magnetic energy, Remote sensing system- passive system, Active system, Applications – mineral, land use / land cover, Natural hazards and environmental engineering system.14VTacheometric Survey: Principle of tacheometry, Essential requirements of tacheorneter, Use of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topics.14		Traversing with Theodolite - Method of included angles, Locating details, Checks in							
III Departure consecutive co-ordinates error of closure, Distribution of a angular error, Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic. 14 IV Aerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing – introduction, Electro-magnetic energy, Remote sensing system- passive system, Active system, Applications – mineral, land use / land cover, Natural hazards and environmental engineering system. 14 V Tacheometric Survey: Principle of tacheometry, Essential requirements of tacheorneter, Use of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topics. 14		closed traverse, Calculation of bearings from angles, Traverse computation - Latitude,							
Image: Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic. Image: Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple problems on above topic. IV Aerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing – introduction, Electro-magnetic energy, Remote sensing system- passive system, Active system, Applications – mineral, land use / land cover, Natural hazards and environmental engineering system. 14 V Image: Tacheometric Survey: Principle of tacheometry, Essential requirements of tacheorneter, Use of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topics. 14	III	Departure consecutive co-ordinates error of closure, Distribution of a angular error,							
problems on above topic. Aerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing – introduction, Electro-magnetic energy, Remote sensing system passive system, Active system, Applications – mineral, land use / land cover, Natural hazards and environmental engineering system. 14 V Tacheometric Survey: Principle of tacheometry, Essential requirements of tacheorneter, Use of theodolite as a Tacheometric constants, Simple numerical problems on above topics. 14		Balancing the traverse by Bowditch rule and Transit Rule, Gale's traverse table, Simple							
IV Aerial Survey and Remote Sensing: Aerial survey introductions, Definition, Aerial photograph, Remote sensing – introduction, Electro-magnetic energy, Remote sensing system- passive system, Active system, Applications – mineral, land use / land cover, Natural hazards and environmental engineering system. 14 V Tacheometric Survey: Principle of tacheometry, Essential requirements of tacheorneter, Use of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No derivation), Determination of tacheometric constants, Simple numerical problems on above topics. 14		problems on above topic.							
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v derivation), Determination of tacheometric constants, Simple numerical problems on above topics.	V	Use of theodolite as a Tacheometer with staff held in vertical and fixed hair method (No	14						
topics.	v	derivation), Determination of tacheometric constants, Simple numerical problems on above	14						
		topics.							

Text Book/References Books/ Websites

- 1. A.M.Chandra; Higher Surveying; New Age International Publishers
- 2. S. K. Duggal; Surveying and Levelling Vol. I and II; Tata Mc Graw-Hill
- 3. Plane Surveying ; A.M.Chandra ; New Age International Publishers

<u>PEOPLE'S UNIVERSITY, BHOPAL</u> (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

Semester –IV

Suggested List of Laboratory Experiments :- (Expandable):

- 1 Understanding the components of Theodolite and their functions, reading the vernier and temporary adjustments of theodolite.
- 2 Measurement of Horizontal angle by transit theodolite.
- 3 Measurement of Horizontal angle by method of Repetition.
- 4 Measurement of vertical angles by theodolite.
- 5 Measurement of Magnetic bearing of a line using theodolite.
- 6 Measurement of deflection angle by taking open traverse of sides.
- 7 To find reduced levels and horizontal distances using theodolite as a Tacheometer
- 8 To find constants of a given Tacheometer.
- 9 Study and use of 1 second Micro Optic Theodolite for measurement of Horizontal and Vertical angles.
- 10 Study of E.D.M. for knowing its components.

<u>PEOPLE'S UNIVERSITY, BHOPAL</u> (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

Subject Code	Subject Title	C	red	it		Theory				
DCE1405	Public Health	L	Т	Р	External	Internal	Total (100)	External	Internal	Total (50)
DCE1405	Engineering	3	1	1	(70)	(30) Min: 40 (D Grad	Min: 40 (D Grade)	(35)	(15)	Min: 20 (D Grade)

Duration of Theory (Externals): 3 Hours

Pre-Requisite	Nil	
Course Outcome	1. Student should able to know demands of water.	
	2. Student should able to know construction of dug well.	
	3. Student should able to know, water borne disease.	

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

Unit	Contents (Theory)	Marks
		Weightage
I	Introduction: Duties of P.H. Engineer, Need and importance of P.H.E. Quantity of Water & Source of Water: Demands of water, Domestic, Industrial, Commercial & Institutional, Public use, Losses and wastes, Fire demand; Factors affecting rate of Demand, Variations of water demands, Forecasting of population, Methods of forecasting of population, Design period for water supply scheme. Estimation of quantity of water supply required for a town or city, Types of water supply schemes.	14
II	Source Of Water: Surface and Subsurface sources of water ,Ground water, Open well, Tube-Well, infiltration well, Infiltration gallery, Infiltration pipes, Construction of dug well, Construction of tube well, Well Testing, Yield of well. Intake Structures-Definition and types, Factors governing the location of an intake structure, Factors governing the location of an intake Factors governing the location of an intake structure – Necessity Importance and advantages.	14
ш	Surface/ground water, Water borne disease, Need for analysis of water, Characteristics of water-Physical, Chemical and Biological, Testing of water for Total Solids, hardness, Chlorides, Dissolved Oxygen, pH, Bacteriological tests, Sampling of water, Water quality standards as per I.S.	14
IV	 Purification of Water : Screening- Types of screens, Aeration- objects and methods of aeration, Plain sedimentation, Sedimentation with coagulation, Principles of coagulation, Types of coagulants, Jar Test, process of coagulation, Types of sedimentation tanks, Filtration theory of filtration. Classification of Filters: Slow sand filter, Rapid sand filter, Pressure filter, domestic filter, Filter media, Construction and working of slow sand filter and rapid sand filter, Disinfection: Objects, methods of disinfection, Chlorination- Application of chlorine, Forms of chlorination, Types of chlorination practices, Residual chlorine and its importance, Flow diagram of water treatment plants and R.O Plant. 	14

Semester –IV

14

<u>PEOPLE'S UNIVERSITY, BHOPAL</u> (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

V

Conveyance And Distribution of Water: Types of Pipes used for conveyance of water, Choice of pipe material, Types of joints & Types of valves- their use, Location and function on a pipeline, Methods of distribution of water- Gravity, Pumping, and combined system Service reservoirs – functions and types, Layouts of distribution of water- Dead end system, Grid iron system, Circular system, Radial system, their suitability, Advantages and disadvantages.

Text Book/References Books/ Websites

- 1. G.S. and Bridie J.S. Birdie ; Water supply and Sanitary Engg ; Dhanpat Rai & Sons, Delhi
- 2. Gurucharan Singh; Water Supply & Sanitary Engg; Standard Publishers.
- 3. Santosh Garg ; Environmental Engg. (Volume I & II); Khanna Publishers.
- 4. S.C. Rangwala ; Water Supply & Sanitary Engg ; Charottas Publishing House.

Suggested List of Laboratory Experiments :- (Expandable):

- 1 To perform turbidity test for difference sources of water simple.
- 2 To perform Color test for water sample .
- 3 Test for PH, Hardness, Chlorides, Iron & manganese.
- 4 To perform MPN test for difference sources.
- 5 To measure the residual chlorine in the water sample

oveder

- 6 Test for total, volatile, fixed suspended and settable solid.
- 7 To find out D.O., B.O.D., C.O.D.for different water sample.

Semester –IV

Semester –IV

<u>PEOPLE'S UNIVERSITY, BHOPAL</u> (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

Subject Code	Subject Title	Credit		lit	Theory		Practical			
DCE1404	Comonoto I ob	L	Т	Р	External	Internal	Total	External	Internal	Total (50)
DCE1406	Concrete Lab	-	-	1	(Nil)	(Nil)	(Nil)	(35)	(15)	Min: 20 (D Grade)

Duration of Theory (Externals): Nil

Pre-Requisite	Nil	
Course Outcome	1. Student should know how to control the quality of concrete.	
	2. Student should know about properties of concrete.	
	3. Student should know about working of concrete.	

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

Text Book/References Books/ Websites: Nil

Suggested List of Laboratory Experiments :- (Expandable)

- 1 Initial and Final setting time of cement by Vicat's apparatus.
- 2 Determination of uncombined lime by Le-chateliers apparatus.
- 3 Determination of compressive strength of concrete with different cement grades.
- 4 Determination of workability of concrete by slump test.
- 5 Determination of workability by compacting factor apparatus.
- 6 Determination of workability of concrete by Vee-Bee apparatus.
- 7 Non-destructive testing of concrete by rebound hammer test.
- 8 Study of Non destructive testing by ultrasonic pulse velocity test.

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Semester –IV

<u>PEOPLE'S UNIVERSITY, BHOPAL</u> (Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering**

Subject Code	Subject Title	Credit			Theory			Practical		
DCE1407	Industrial	L	Т	Р	External	Internal	Total	External (70)	Internal	Total (100)
DCE1407	Training-I	-	-	2	(Nil)	(Nil)	(Nil)	(70)	(30)	Min: 40 (D Grade)

Duration of Theory (Externals): -Nil

Theory Internal- Max Marks: -	Best of Two Mid Semester Test -	Assignment/Quiz/Attendance -
	Max Marks: - Nil	Max. Marks: - Nil
Practical Internal Max Marks: 30	Lab work & Sessional -	Assignment / Quiz/ Attendance -
	Max Marks: 25	Max. Marks: 05
	•	

Pre-Requisite	Fundamental Engineering Concepts.
Course Outcome	1. To develop general confidence, ability to communicate and attitude in addition to basic technological concepts through Industrial visits, expert lectures, seminars on technical topics and group discussion.
	2. Ability to learn actual working environment.

Unit	Contents (Theory)	Marks Weightage
Ι	As a part of the Diploma in Engineering curriculum, DPE1407, Industrial Training -I is a Practical course, which the students should undergo in reputed Private / Public Sector / Government organization / companies as industrial training of minimum two weeks to be undergone by the student in the semester break after III semester theory examinations. Training period : Minimum of two weeks or 15 (Fifteen) Days. Companies / Areas covered : Any field related to concern branch / discipline of Diploma in Engineering. Grading : As per Scheme. Note: Presentation will take place the following week after you complete your training. The presentation is evaluated by your class in charge. Report must be submitted during power point presentation. A Viva voce comprising comprehensive questions based on your training undergone. Etiquette: Dress properly, Behave well, Portray good image as a university student, Be punctual, Observe work ethics, Concern for safety, Be professional.	100

Text Book/References Books/ Websites: Nil

Suggested List of Laboratory Experiments :- (Expandable): Nil