

RGPV(DiplomaWing)Bhopal				SEMESTERTEACHINGLEARNING&ASSESSMENTPLAN										FORMAT-6			
NAMEOF PROGRAMME			THREEYEARS DIPLOMA			SCHEME		OBE		IMPLEMENTINGYEAR			2020-21				
BRANCHCODE		NAMEOF BRANCH		AGRICULTURE ENGG / AGRICULTURAL ENGG						SEMESTER		FOURTH					
S. No	COURSEDETAILS						T-LPLAN		ASSESSMENTPLAN								
	COURSE CODE	COURSE NAME	CREDITS	PAPER CODE	No OF COs	No. of LOs	Total T-L Hrs.	T-L Hrs. /Week	Internal Assessment		ExternalAssessment(UniversityExam)						Grand Total of Marks
									No. of LOs (C+P)#	Total Marks	TheoryPaper			PracticalExam*			
No. of LOs	Total Marks	Duration in Hrs	No. of LOs	Total Marks	Duration in Hrs												
1	401	SOIL MECHANICS	5+2	6904	05	14	105	07	2+4	30 +20	70	03:00	02	30	03:00	150	
2	402	ADVANCE SURVEY	5+2	6905	15	105	105	07	3+5	30 +20	70	03:00	02	30	03:00	150	
3	403	AGRICULTURE PRODUCTION TECHNOLOGY-I	5+2	7315				12		30+20	70	03:00	03	30	03:00	150	
4	404	MECHANICS OF STRUCTURE	5+2	6907	05	15	90	06	3+5	30+20	70	03:00	03	30	03:00	150	
5	405	Professional Development-IV	2		03		60	04	06	75						75	
TOTAL														120			
No.ofTheoryPapers											04		No.ofPracticalExams			04	

\*ExamforLOs(Psycho+ Affect.)#(C+P) =cognitive+ Psychomotor

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 1/3
Branch	AGRICULTURAL ENGINEERING		Semester	4 <sup>th</sup>	
Course Code	401/6904	Course Name	Soil Mechanics		
Course Outcome 1	Define the soil and interpret its properties related to construction to classify types of soil.		Teach Hrs	Marks	
Learning Outcome 1	Explain the scope of soil mechanics and soil as three phase system and establish relationship between properties of soil		12	10	
Contents	<p>Definition of soil, Importance of Soil Studies in Civil Engineering, Geological origin of soils with special reference to soil profiles in India: residual and transported soil, alluvial deposits, lake deposits, local soil found in MP, black cotton soils.</p> <p>Constituents of soil and representation by a phase diagram</p> <p>Definitions of void ratio, porosity, degree of saturation, water content, specific gravity, unit weight, bulk density/bulk unit weight, dry unit weight, saturated unit weight and submerged unit weight of soil grains and correlation between them</p> <p>Simple numerical problems with the help of phase diagrams</p>				
Method of Assessment	External : End semester Examination-Pen Paper Test				
Learning Outcome 2	Classify and identify various types of soil and determine properties of soil by standard test procedures.		8	10	
Contents	<p>Consistency of soil, Atterberg limits of consistency: Liquid limit, plastic limit and shrinkage limit. Plasticity index.</p> <p>Particle size distribution test and plotting of curve, Determination of effective diameter of soil, well graded and uniformly graded soils, BIS classification of soil.</p>				
Method of Assessment	Internal: Mid Semester Exam I - Pen paper test/Assignment				
Learning Outcome 3	Determine water content , grain size distribution , Liquid & Plastic limit of given sample.		12		
Contents	<ol style="list-style-type: none"> <li>1. Determination of water content of given soil sample by oven drying method as per IS Code.</li> <li>2. Determination of specific gravity by Pycnometer</li> <li>3. Determination of grain size distribution of given soil sample by mechanical sieve</li> <li>4. Determination of Liquid limit &amp; Plastic limit of given soil sample as per IS Code.</li> </ol>				
Method of Assessment	Lab Experiment				

<b>Course Outcome 2</b>	Describe the concept of permeability & Stress and determine permeability of given soil.		
<b>Learning Outcome 1</b>	Understand signification of permeability and seepage and compute those	10	20
<b>Contents</b>	Concept of permeability and its importance, Darcy's law, coefficient of permeability, factors affecting permeability. Permeability of stratified soil deposits, Methods of measurement of permeability Seepage through earthen structure, seepage velocity, seepage pressure, phreatic line, flow line and equipotential line, flow net and its application, Comparison of permeability of different soils as per Indian Standards, Simple numerical problems		
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test		
<b>Learning Outcome 2</b>	Determine permeability by constant head and falling head test using Darcy's Law.	6	
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Determination of coefficient of permeability by constant head test</li> <li>2. Determination of coefficient of permeability by falling head test .</li> </ol>		
<b>Method of Assessment</b>	Lab Experiment		
<b>Course Outcome 3</b>	Describe requirement and mechanism of compaction and explain concept of consolidation.		
<b>Learning Outcome 1</b>	Explain compaction and consolidation of soil and methods of compaction.	8	20
<b>Contents</b>	Compaction - Definition and necessity of compaction Laboratory compaction test: standard and modified proctor test as per IS code, optimum water content, maximum dry density, Factors affecting Compaction, Field methods of compaction – rolling, ramming & vibration, Suitability of various compaction Equipments-smooth wheel roller, sheep foot roller, pneumatic tyred roller, Rammer and Vibrator. Determination of field density of soil, Simple Numerical problems. Consolidation, Difference between compaction and consolidation.		
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test		
<b>Learning Outcome 2</b>	Determine Bulk unit weight dry unit weight of in field and MDD & OMC of given soil.	9	
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Determination of bulk unit weight &amp; dry unit weight of soil in field by core cutter method as per IS Code.</li> <li>2. Determination of bulk unit weight &amp; dry unit weight of soil in field by Sand replacement method as per IS Code.</li> <li>3. Determination of MDD &amp; OMC by standard proctor test on given soil sample as per IS Code.</li> </ol>		
<b>Method of Assessment</b>	Lab Experiment		
<b>Course Outcome 4</b>	Calculate shear strength of soil ,Bearing capacity of soil and Earth Pressure.		

<b>Learning Outcome 1</b>	Determine the shear strength of soil as per coulomb's law.	8	7
<b>Contents</b>	Shear Strength of Soil - Concept and Significance of shear strength, Factors contributing to shear strength of cohesive and cohesion less soils , Coulomb's law, Determination of shearing strength by Direct shear test, Tri axial test, Unconfined compression test and Vane shear test. Drainage conditions of test and their significance , Numerical problems		
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test		
<b>Learning Outcome 2</b>	Calculate Bearing Capacity of Soil.	8	7
<b>Contents</b>	Concept of bearing capacity, ultimate bearing capacity, safe bearing capacity and allowable bearing pressure. Introduction to Terzaghi's analysis and assumptions, effect of water table on bearing capacity. Field methods for determination of bearing capacity – Plate load and Standard Penetration Test. Test procedures as per IS:1888 & IS:2131. Total and differential Settlement, Permissible values of settlement. ☐		
<b>Method of Assessment</b>	Internal: Mid Semester Exam II - Pen paper test/Assignment		
<b>Learning Outcome 3</b>	Explain and calculate Earth Pressure.	6	6
<b>Contents</b>	Definition of Active earth pressure, Passive earth pressure, Earth pressure at rest. coefficient of earth pressure, Rankine's theory and assumptions Use of Rankine's formula for the following cases (cohesion-less soil only) (i) Backfill with no surcharge, (ii) backfill with uniform surcharge Simple Numerical Problems		
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test		
<b>Learning Outcome 4</b>	Determine shear strength of soil using various test .	6	
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Determination of shear strength of soil using direct shear test.</li> <li>2. Determination of shear strength of soil using Laboratory Vane shear test</li> </ol>		
<b>Method of Assessment</b>	Lab Experiment		
<b>Course Outcome 5</b>	Explain the methods of soil exploration and soil stabilization.		
<b>Learning Outcome 1</b>	Understand the necessity of soil exploration and method to take sampling of soil.	6	10
<b>Contents</b>	Necessity of site investigation & sub-soil exploration. Types of exploration – general, detailed. Method of site exploration open excavation & boring(auger, wash, rotary, percussion) . Criteria for deciding the location and number of test pits and bores. Sampling and Types of samplers. Disturbed & undisturbed soil samples		
<b>Method of Assessment</b>	Internal: Assignments/Presentation/Seminar		
<b>Learning Outcome 2</b>	Explain the methods of soil stabilization and suitability of each.	6	10

<b>Contents</b>	Concept of soil stabilization, necessity of soil stabilization, Different methods of soil stabilization – Mechanical soil stabilization, lime stabilization, cement stabilization, bitumen stabilization, fly-ash stabilization
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test

### Suggested Learning Resources :-

<b>S.No</b>	<b>Title</b>	<b>Author</b>	<b>Edition</b>
1	Soil Mechanics & Foundation Engineering	Dr. B. C. Punmia	Standard Book house, New Delh
2	Soil Mechanics & Foundation Engineering	V.N.S. Murthi	Tata McGraw Hill , New Delhi
3	Soil Mechanics	B. J. Kasmalkar	Pune Vidhyarti Griha, Pune
4	Geo-technical Engineering	Gulhati & Dutta	Tata McGraw Hill , New Delhi

<b>RGPV (DIPLOMA WING) BHOPAL</b>		<b>OBE CURRICULUM FOR THE COURSE</b>		<b>FOR MAT</b> <b>3</b>	<b>Sheet No.</b> <b>1/3</b>
<b>Branch</b>	<b>AGRICULTURAL ENGINEERING</b>		<b>Semester</b>	<b>IV</b>	
<b>Course Code</b>	<b>401/6905</b>	<b>Course Name</b>		<b>Advance Surveying</b>	
<b>Course Outcome 1</b>	<b>Apply basics of contouring and prepare contour map.</b>			<b>Teach Hrs (T+P)</b>	<b>Marks</b>
<b>Learning Outcome C0340111</b>	<i>Explain basics of contouring.</i>			02	10
<b>Contents</b>	<i>Definitions – Contour, contour interval, Horizontal equivalent. Characteristics of contours.</i>				
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test				
<b>Learning Outcome C0340112</b>	<i>Describe methods of contouring and uses of contour.</i>			04	10
<b>Content</b>	<i>Method of locating contours. Interpolation of contours. Establishing grade contours. Uses of Contour Maps. Calculation of reservoir capacity by contour map by trapezoidal and Prismoidal formula. Interpretation of Typical Contour Sheets.</i>				
<b>Method of assessment</b>	External : End semester Examination-Pen Paper Test				
<b>Learning Outcome C0340113</b>	<b>Perform contour survey and plot contour map.</b>			12	
<b>Contents</b>	<i>1. Block contouring for a block of 100x150m with spot level at 10x10m., plotting the contour.</i>				
<b>Method of Assessment</b>	PRACTICAL				
<b>Course Outcome 2</b>	<b>Perform theodolite traversing.</b>				
<b>Learning Outcome C0340121</b>	<i>Explain components and basis terminology of theodolite and measurement of angle by different methods.</i>			05	08



<b>Contents</b>	<p><i>Components of Transit Theodolite and Their functions.</i>  <i>Technical terms used. Temporary adjustments of Transit Theodolite.</i>  <i>Swinging the telescope, Transiting, Changing the face.</i>  <i>Measurement of Horizontal angle, method of Repetition, errors eliminated by method of repetition.</i>  <i>Measurement of Deflection angle.</i>  <i>Measurement of Vertical angle.</i>  <i>Measurement of magnetic bearing of a line by Theodolite.</i>  <i>Prolonging a Straight line.</i>  <i>Sources of errors in Theodolite Surveying.</i>  <i>Permanent adjustment of transit Theodolite (only relationship of different axes of Theodolite.)</i></p>		
<b>Method of Assessment</b>	Mid sem exam /pen paper/assignments		
<b>Learning Outcome C0340122</b>	Compute the coordinates by theodolite traversing.	05	12
<b>Contents</b>	<p><i>Traversing with Theodolite – Method of included angles, locating details, checks in closed traverse,</i>  <i>Calculation of bearings from angles.</i>  <i>Traverse Computation - Latitude, Departure Consecutive Co-ordinates error of Closure, Distribution of a angular error,</i>  <i>balancing the traverse by Bowditch rule and Transit Rule,</i>  <i>Gale's traverse table.</i>  <i>Simple problems on above topic.</i></p>		
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test		
<b>Learning outcome C0340123</b>	Measure angle and coordinates by different methods using theodolite.	24	
<b>Content</b>	<ol style="list-style-type: none"> <li>1. Understanding the components of Theodolite and their functions, reading the vernier and temporary adjustments of theodolite. Measurement of Horizontal angle by transit theodolite.</li> <li>2. Measurement of Horizontal angle by method of Repetition.</li> <li>3. Measurement of vertical angles by theodolite.</li> <li>4. Measurement of Magnetic bearing of a line using theodolite.</li> <li>5. Measurement of deflection angle by taking open traverse of 4 –5 sides.</li> <li>6. Theodolite traverse survey for a closed traverse of 5-6 sides for a small area, compute the co-ordinates by Gale's traverse table and plot the traverse.</li> </ol>		
<b>Method of Assessment</b>	Mid sem exam /pen paper/assignments		
<b>Course outcome 3</b>	Measure height and distance by tachometer.		
<b>Learning Outcome C0340131</b>	Explain techniques of Tachometric survey to calculate height and distances.	10	14



<b>Contents</b>	<i>Principle of Tachometry. Essential requirements of Tachometer. Use of Theodolite as a Tachometer with staff held in vertical and fixed hair method (No derivation). Determination of tachometric constants, simple numerical problems on above topics</i>		
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test		
<b>Learning Outcome C0340132</b>	<i>Measure height and distances using Tachometer.</i>	06	
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. To find reduced levels and horizontal distances using theodolite as a Tachometer.</li> <li>2. To find constants of a given Tachometer.</li> </ol>		
<b>Method of Assessment</b>	PRACTICAL LAB WORK		
<b>Course Outcome 4</b>	<i>Develop skills to set out simple circular curve on the field.</i>		
<b>Learning Outcome C0340141</b>	<i>Explain basics of curves, components and types.</i>	03	10
<b>Contents</b>	<i>Types of curves used in road and railway alignments. Notations of simple circular curve. Designation of curve by radius and degree of curves</i>		
<b>Method of Assessment</b>	<i>Mid sem exam /pen paper/assignments</i>		
<b>Learning Outcome C0340142</b>	<i>Describe various methods of setting out of simple circular curves.</i>	06	14
<b>Contents</b>	<i>Method of Setting out curve by offset from Long chord method and Rankine's method of deflection. Angles. Simple Numerical problems on above topics.</i>		
<b>Method of Assessment</b>	<i>Mid sem exam /pen paper/assignments</i>		
<b>Learning Outcome C0340143</b>	<i>Set out simple circular curves on field and plot it.</i>	06	
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Setting out simple circular curve by rankine's method and plot it.</li> </ol>		
<b>Method of Assessment</b>	PRACTICAL ON GROUND		
<b>Course Outcome 5</b>	<i>Study of different advance surveying equipment and analyzing various aspect of geological feature through remote sensing.</i>		
<b>Learning Outcome C0340151</b>	<i>Describe different terminology and use of advance surveying equipment.</i>	03	06





<b>Contents</b>	<i>Construction and use of one second Micro Optic Theodolite, Electronic Digital Theodolite. Features of Electronic Theodolite Principle , Components , functions and use of E.D.M. and Total station</i>		
<b>Method of Assessment</b>	<i>Mid sem exam /pen paper/assignments</i>		
<b>Learning Outcome C0340152</b>	<i>Explain remote sensing and its application.</i>	04	06
<b>Contents</b>	<i>Remote Sensing – Introduction, Electro-Magnetic Energy , Remote sensing system Passive system, Active system. Applications of remote sensing in civil engineering– mineral, land use / Land cover, mapping, disaster management. Natural Hazards and Environmental engineering system. Aerial Survey Introductions, definition, Aerial photograph.</i>		
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test		
<b>Learning Outcome C0340153</b>	<i>Explain the use of GPS / GIS</i>	03	10
<b>Contents</b>	<i>Introduction, definition and components, content of GIS/GPS, geological concept, application of GIS. Use of global positioning system (GPS) instruments. Introduction to drone Surveying.</i>		
<b>Method of Assessment</b>	<i>Mid sem exam /pen paper/assignments</i>		
<b>Learning Outcome C0340154</b>	<i>Measure the angles by micro optic theodolite, geographical parameters by total station and use of GPS and GIS</i>	12	
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Study and use of 1 second Micro Optic Theodolite for measurement of Horizontal and Vertical angles.</li> <li>2. Study of E.D.M. for knowing its components.</li> <li>3. Determine the geographical parameters of 4-5 sided traverse by total station and plot them.</li> <li>4. Use GPS to locate the coordinates of a station.</li> </ol>		
<b>Method of Assessment</b>	Lab PRACTICALS		



RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 1/3
Branch	Agricultural Engineering			Semester	4 <sup>th</sup>
Course Code	403/7315	Course Name		Agriculture Production Technology -I	
<b>Course Outcome 1</b>	Explain pattern of annual distribution of rainfall and national agricultural production scenario in India.			Teach Hrs	Marks
<b>Learning Outcome 1</b>	Understand rainfall distribution and variability.			12	15
<b>Contents</b>	Agro-climatic zones of India, agro-ecological sub-regions in India, Pattern of normal annual distribution of rainfall in India and their variability.				
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test				
<b>Learning Outcome 2</b>	Understand agricultural production scenario in respect of acreage, production and productivity of crops.			8	10
<b>Contents</b>	National agricultural production scenario with respect to acreage, production and productivity of crops, major soils of India and their distribution, land capability classification and land use pattern.				
<b>Method of Assessment</b>	Internal: Mid Semester Exam I - Pen paper test/Assignment				
<b>Course Outcome 2</b>	Explain essential plant nutrients, nutrient uptake mechanisms and photosynthesis.				
<b>Learning Outcome 1</b>	Understand Liebig's law of Minima, plant nutrients and growth.			10	15
<b>Contents</b>	Essential plant nutrients, Liebig's law of Minima, Nutrient uptake mechanisms in plants, plant nutrients and growth,				
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test				
<b>Learning Outcome 2</b>	Differentiate C <sub>3</sub> and C <sub>4</sub> plants and factors affecting photosynthesis.			10	10
<b>Contents</b>	Photosynthesis, difference between C <sub>3</sub> and C <sub>4</sub> plants, factors affecting photosynthesis and net dry matter accumulation in plants.				
<b>Method of Assessment</b>	Internal: Mid Semester Exam I - Pen paper test/Assignment				

<b>Course Outcome 3</b>	Describe Commercial Fertilizers in India and its contribution and types of organic manures and their nutrient content.		
<b>Learning Outcome 1</b>	Explain contribution of fertilizers in National food production.	15	15
<b>Contents</b>	Commercial Fertilizers in India, indigenous Production and import of commercial fertilizers, contribution of fertilizers in National food production.		
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test		
<b>Learning Outcome 2</b>	Explain manure types and their availability in India and Understand the role of nitrogen fixation.	10	10
<b>Contents</b>	Different types of organic manures and their nutrient content, extent of availability of manures in India, biological nitrogen fixation and its role in National food production and in fertilizer N saving.		
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test		
<b>Course Outcome 4</b>	Describe agronomic package of practices for cultivation		
<b>Learning Outcome 1</b>	Explain agronomic package of practices for cultivation of various cereal crops, land preparation and fertilizer requirement and other practices.	10	12
<b>Contents</b>	Agronomic package of practices for cultivation of major cereal crops, namely, Rice, Wheat, Barley, Maize and Oats, highlighting Scientific name, family, origin, climatic requirement, sowing time, land preparation, seed rate, sowing methods, Important varieties, fertilizer requirement, water requirement, inter-culture operations, plant protection measures, harvesting etc.		
<b>Method of Assessment</b>	External : End semester Examination-Pen Paper Test		
<b>Learning Outcome 2</b>	Identification of major fertilizers and analyzing nutrient content.	15	13
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Seed bed preparation.</li> <li>2. Identification of major fertilizers.</li> <li>3. Analysis of nutrient content as per fertilizer control order.</li> <li>4. Identification of major cereal crops and their phenotypic differences.</li> <li>5. Identification of major weeds.</li> </ol>		
<b>Method of Assessment</b>	Lab Experiment		

### Suggested Learning Resources :-

<b>S.No</b>	<b>Title</b>	<b>Author</b>	<b>Edition</b>
1	Principles of Plant Nutrition	Konrad Mengel and Ernest A. Kirkby	Springer Science Business Media
2	Textbook of Field Crop Production	Rajendra Prasad	Directorate of Knowledge Management in Agriculture, Indian Council of Agricultural Research
3	Introduction to Agronomy & Principles of Crop Production	S.R.Reddy	Kalyani Publishers
4	Principles of Agronomy	T.Y.Reddy and G.H.S.Reddy	Kalyani Publishers

<b>RGPV (DIPLOMA WING) BHOPAL</b>		<b>OBE CURRICULUM FOR THE COURSE</b>		<b>FORMAT-3</b>	<b>Sheet No. 1/3</b>
<b>Branch</b>	<b>AGRICULTURAL ENGINEERING</b>			<b>Semester</b>	<b>4</b>
<b>Course Code</b>	<b>404/6907</b>	<b>Course Name</b>	<b>Mechanics of Structure</b>		
<b>Course Outcome 1</b>	<b>Articulate practical applications of moment of inertia of symmetrical and unsymmetrical structural sections and calculate moment of inertia of plane area sections.</b>			<b>Teach Hrs</b>	<b>Marks</b>
<b>Learning Outcome 1</b>	Calculate MI of regular plane area sections and recognize practical significance of MI.			4	5
<b>Contents</b>	Definition, M.I. of plane lamina, Parallel and Perpendicular axes theorems (without derivations) M.I. of rectangle, square, circle, semi-circle, quarter circle and triangle section (without derivations). polar moment of Inertia and radius of gyration.				
<b>Method of Assessment</b>	Pen Paper Test				
<b>Learning Outcome 2</b>	Calculate MI of various symmetrical and asymmetrical sections.			8	10
<b>Contents</b>	M.I. of symmetrical and unsymmetrical I-section, Channel section, T- section, Angle section, Hollow sections and built up sections about centroidal axes and any other reference axis.				
<b>Method of Assessment</b>	External -pen paper test				
<b>Course Outcome 2</b>	<b>Analyze structural behavior of materials under various loading conditions.</b>			<b>Teach Hrs</b>	<b>Marks</b>
<b>Learning Outcome 1</b>	Calculate simple stress and strain on axially loaded members and articulate significance of stress – strain curve.			8	10
<b>Contents</b>	Definition of rigid, elastic and plastic bodies, deformation of elastic body under various forces, Definition of stress, strain, elasticity, Hook's law, Elastic limit, Modulus of elasticity. Type of Stresses-Normal, Direct, Bending and Shear and nature of stresses i.e. Tensile and Compressive stresses.  Standard stress strain curve for tor steel bar under tension, Yield stress, Proof stress, Ultimate stress, Strain at various critical points, Percentage elongation and Factor of safety.  Deformation of body due to axial force, forces applied at intermediate sections, Maximum and minimum stress induced, Composite section under axial loading.				
<b>Method of Assessment</b>	External -pen paper test				

<b>Learning Outcome 2</b>	Calculate stress and strain due to temperature variation	4	5
<b>Contents</b>	Concept of temperature stresses and strain, Stress and strain developed due to temperature variation in homogeneous simple bar (no composite section)		
<b>Method of Assessment</b>	Pen Paper Test		
<b>Learning Outcome 3</b>	Calculate change in volume of a member for given stress condition and Bulk modulus.	6	5
<b>Content</b>	Longitudinal and lateral strain, Modulus of Rigidity, Poisson's ratio, Biaxial and tri-axial stresses, volumetric strain, change in volume, Bulk modulus (Introduction only).		
<b>Method of Assessment</b>	External -pen paper test		
<b>Learning Outcome 4</b>	Calculate average shear stress, shear strain and shear modulus.	4	5
<b>Contents</b>	Shear stress and strain, modulus of rigidity, complimentary shear stress Concept of single and double shear, punching shear.  Relation between modulus of elasticity, modulus of rigidity and bulk modulus (without derivation).		
<b>Method of Assessment</b>	Pen Paper Test		
<b>Course Outcome 3</b>	<b>Draw &amp; Interpret shear force and bending moment diagrams for various types of beams and loading conditions.</b>	<b>Teach Hrs</b>	<b>Marks</b>
<b>Learning Outcome 1</b>	Discuss various types of load, end condition and beam and relate them with actual field conditions.	3	3
<b>Contents</b>	Types of supports, beams and loads.		
<b>Method of Assessment</b>	Pen Paper Test		
<b>Learning Outcome 2</b>	Calculate shear force and bending moment and draw shear force diagram and bending moment diagram for beams with given end conditions and loads.	17	14
<b>Contents</b>	Concept and definition of shear force and bending moment, Relation between load, shear force and bending moment (without derivation). Shear force and bending moment diagram for cantilever, simply supported beams and overhanging beams subjected to point loads, uniformly distributed loads and couple (combination of any two types of loading), point of contra flexure.		
<b>Method of Assessment</b>	External -pen paper test		
<b>Course Outcome 4</b>	<b>Determine the bending and shear stresses in beams under different loading conditions.</b>	<b>Teach Hrs</b> 12	<b>Marks</b>

<b>Learning Outcome 1</b>	Determine bending stress at a given location and plot bending stress distribution for given beam under given loads.	8	10
<b>Contents</b>	Concept and theory of pure bending, assumptions, flexural equation (without derivation), bending stresses and their nature, bending stress distribution diagram. Concept of moment of resistance and simple numerical problems using flexural equation.		
<b>Method of Assessment</b>	Pen Paper Test		
<b>Learning Outcome 2</b>	Determine shear stress at a given location and plot shear stress distribution for various beam sections.	8	10
<b>Contents</b>	Shear stress equation (without derivation), relation between maximum and average shear stress for rectangular and circular section, shear stress distribution diagram. Shear stress distribution for square, rectangular, circle, hollow, square, rectangular, circular, angle sections, channel section, I-section, T section. Simple numerical problems based on shear equation.		
<b>Method of Assessment</b>	Pen Paper Test		
<b>Course Outcome 5</b>	<b>Analyse the column for various loading and end conditions.</b>	<b>Teach Hours</b>	<b>Marks</b>
<b>Learning Outcome 1</b>	Discuss ways of failure of columns and end conditions of columns.	4	5
<b>Contents</b>	Concept of compression member, short and long column, Effective length, Radius of gyration, Slenderness ratio, Types of end condition for columns, Buckling of axially loaded columns.		
<b>Method of Assessment</b>	Pen Paper Test		
<b>Learning Outcome 2</b>	Calculate safe load for axially loaded columns applying Euler's formula / Rankine's formula	8	8
<b>Content</b>	Euler's theory, assumptions made in Euler's theory and its limitations, Application of Euler's equation to calculate buckling load. Rankine's formula and its application to calculate crippling load. Concept of working load/safe load, design load and factor of safety.		
<b>Method of Assessment</b>	Pen Paper Test		
<b>Course Outcome 6</b>	<b>Evaluate axial forces in the members of perfect plane trusses.</b>	<b>Teach Hrs</b>	<b>Marks</b>
<b>Learning Outcome 1</b>	Calculate forces in members of trusses subjected to point loads at joints by Method of joints and Method of sections.	8	10

<b>Contents</b>	Classification of frames Types of trusses (Simple, Fink, compound fink, French truss, Pratt truss, Howe truss, North light truss, King post and Queen post truss) Assumptions in analysis. Calculate support reactions for trusses subjected to point loads at joints Calculate forces in members of truss using Method of joints and Method of sections.
<b>Method of Assessment</b>	Pen Paper Test

Suggested learning resources:

1. Khurmi, R.S., Strength of Materials, S Chand and Co. Ltd. New Delhi.
2. Bansal R K, Strength of Materials, Laxmi Publications.
3. Ramamurtham, S, Strength of Materials, Dhanpat Rai and sons, New Delhi.
4. Punmia B C, Strength of Materials, Laxmi Publications (p) Ltd. New Delhi.
5. Subramaniam R, Strength of Materials, Oxford University Press.



RGPV (Diploma Wing ) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No.
								4	0	5	1	1	4
<b>COURSE NAME</b>	Professional Development- IV												
<b>CO Description</b>	Student will be able to organize activities related to student chapters of professional bodies and student related academic events of the department												
<b>LO Description</b>	Student will be able to organize activities related to student chapters of professional bodies												
SCHEME OF STUDY													
S. No	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Planning and organizing group activities and events, deciding sub-activities, distributing responsibilities, arranging resources sub-activities, scheduling sub-activities	Traditional lecture method + Case Study	Teacher will teach students how activities are planned and organized, will discuss examples and cases. Teacher will form small student groups, guide them to plan and organize the activities assigned to their group, teacher will supervise their implementation of the activity plans and correct their mistakes, teacher will ensure their learning through organizing the related different activities	04	06	Handout, video film*	*Teacher will suggest a suitable online video to be viewed by students						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal								
1	Student activity/task	The teacher will ask the students to organize small group-activity events. Teacher will observe and assess the extent of quality of plan, implementation of plan and student's learning for organizing professional body activities	10	Rating Scale	Internal								
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
1. Suggested departmental student chapter activities:													

- **Organizing departmental chapter meetings**
- **Local community awareness programme on social issues, traffic rules, cleanliness drive, use of plastics and environmental protection etc.**
- **Poster competition on social concerns, traffic rules, cleanliness drive, use of plastics and environmental protection etc. and awarding the best prepared poster**
- **Engineering knowledge competitions**
- **Outreach workshop for local high school students**
- **Publishing institutional/departmental student chapter newsletter**
- **Establishing and managing students' cooperative book club**
- **Organizing information dissemination and application programme related to continuing and higher education opportunities and how to apply for them, for the students**
- **Organizing short training programmes on public speaking**

**2. Organizing any group activity consists of planning the activity and implementing the plan.**

**3. Process of planning any group activity consists of:-**

- a. Deciding objectives of the activity
- b. Deciding main sub-activities to achieve objectives
- c. Deciding who will be responsible for doing sub-activities
- d. Deciding what pre-requisite information /knowledge/ability is required to complete the any sub-activity
- e. Deciding what resources will be required to conduct the sub-activities
- f. Deciding the expected duration of sub-activities

g. Deciding at start and finish times of sub-activities

**4. Suggested activity plan format(table) :-**

S. No.	Sub-activity number	Sub-activity description	Responsible group member	Duration	Start date	Finish date	Pre-requisite Knowledge /Information required	Resource required
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**5. Implementing the plan consists of:-**

- a. Educating responsible members about how and when to perform the assigned sub-activity
- b. Acquiring necessary pre-requisite knowledge/ information / ability before starting any sub-activity
- c. Arranging resources for various sub activities and provide to responsible members
- d. Ensuring timely start and finish of the different sub activities
- e. If necessary, revising and updating the plan during its implementation

**6. Learning from organizing the activities:-**

After organizing the activity, student groups will answer following self questions about their experiences of organizing the activities

- a. **What problems we have faced during activity planning and implementation?**
- b. **How we managed to solve them?**
- c. **What mistakes and errors we committed in planning and implementation of these activities?**
- d. **What we have learned from these mistakes and errors?**
- e. **In future, what precautions we will take if we will be asked to again organize this activity?**
- f. **What are suggestions to improve planning and implementation of this activity?**

7. Each student group should be allotted an activity from the above suggested list of professional body related activities.

**8. Assessment criteria and their weights:-**

<b>S. No.</b>	<b>Criteria</b>	<b>Marks</b>
1.	Extent of quality in Student's group activity plan	03
2.	Extent of quality in Implementation of the activity plan	03
3.	Extent of learning occurred through performing the group activity	04

9. In course of Professional Development-IV, department may assign teaching learning of one course outcome to one teacher and may also divide students into three batches B1, B2, B3. Simultaneously three student batch will work under the three teachers for the three course outcomes and then the batches will work for next course outcomes under remaining two teachers as per following arrangement:

	T1	T2	T3
	CO1	CO2	CO3
FIRST 20 PERIODS	B1	B2	B3
SECOND 20 PERIODS	B2	B3	B1
THIRD 20 PERIODS	B3	B1	B2

10. The concerned teacher of CO1 may Divide the batch of students under him / her into small groups ( 4-5 students)

<b>RGPV (Diploma Wing ) Bhopal</b>		<b>SCHEME FOR LEARNING OUTCOME</b>			Branch Code		Course Code			CO Code	LO Code	Format No.
							4	0	5	1	2	<b>4</b>
<b>COURSE NAME</b>	<b>Professional Development- IV</b>											
<b>CO Description</b>	<b>Student will be able to organize activities related to student chapters of professional bodies and student related academic events of the department</b>											
<b>LO Description</b>	<b>Student will be able to organize student related academic events of the department</b>											
<b>SCHEME OF STUDY</b>												
<b>S. No</b>	<b>Learning Content</b>	<b>Teaching –Learning Method</b>	<b>Description of T-L Process</b>					<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>	
1	Planning and organizing group activities and events, deciding sub-activities, distributing responsibilities, arranging resources sub-activities, scheduling sub-activities	Traditional lecture method + Case Study	Teacher will teach students how activities are planned and organized, will discuss examples and cases. Teacher will form small student groups, guide them to plan and organize the activities assigned to their group, teacher will supervise their implementation of the activity plans and correct their mistakes, teacher will ensure their learning through organizing the related different activities					04	06	Handout, video film*	*Teacher will suggest a suitable online video to be viewed by students	
<b>SCHEME OF ASSESSMENT</b>												
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>					<b>Maximum Marks</b>	<b>Resources Required</b>	<b>External / Internal</b>			
1	Student activity/task	The teacher will ask the students to organize small group-activity events Teacher will observe and assess the extent of quality of plan, implementation of the plan and student's learning for organizing student related academic events of the department					15	Rating Scale	Internal			
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>												
<b>1. Suggested student related academic events/ activities of the department:</b>												

- **Organizing departmental award ceremonies for departmental outstanding students and high academic achievers**
- **Organizing departmental bulletin board preparation group activities for creating awareness about various scholarships, career prospects etc and awarding the best prepared bulletin board**
- **Organizing departmental faculty appreciation events**
- **Editing and publishing departmental newsletter and departmental magazine**
- **Updating departmental section at college web site/ web portal**
- **Organizing expert lectures of experts of local industry**
- **Organizing lectures of social, enterprising, professional achievers of nearby community**
- **Organizing expert lectures on morality, values, ethics and professional ethics**

**2. Organizing any group activity consists of planning the activity and implementing the plan.**

**3. Process of planning any group activity consists of:-**

- a. Deciding objectives of the activity
- b. Deciding main sub-activities to achieve objectives
- c. Deciding who will be responsible for doing sub-activities
- d. Deciding what pre-requisite information /knowledge/ability is required to complete the any sub-activity
- e. Deciding what resources will be required to conduct the sub-activities
- f. Deciding the expected duration of sub-activities
- g. Deciding at start and finish times of sub-activities

#### 4. Suggested activity plan format(table) :-

S. No.	Sub-activity number	Sub-activity description	Responsible group member	Duration	Start date	Finish date	Pre-requisite Knowledge /Information required	Resource required
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#### 5. Implementing the plan consists of:-

- a. Educating responsible members about how and when to perform the assigned sub-activity
- b. Acquiring necessary pre-requisite knowledge/ information / ability before starting any sub-activity
- c. Arranging resources for various sub activities and provide to responsible members
- d. Ensuring timely start and finish of the different sub activities
- e. If necessary, revising and updating the plan during its implementation

#### 6. Learning from organizing the activities:-

After organizing the activity, student groups will answer following self questions about their experiences of organizing the activities

- a. **What problems we have faced during activity planning and implementation?**
- b. **How we managed to solve them?**
- c. **What mistakes and errors we committed in planning and implementation of these activities?**
- d. **What we have learned from these mistakes and errors?**
- e. **In future, what precautions we will take if we will be asked to again organize this activity?**
- f. **What are suggestions to improve planning and implementation of this activity?**

7. Each student group should be allotted an activity from the above suggested list of professional body related activities.

**8. Assessment criteria and their weights:-**

<b>S. No.</b>	<b>Criteria</b>	<b>Marks</b>
1.	Extent of quality in Student's group activity plan	03
2.	Extent of quality in Implementation of the activity plan	03
3.	Extent of learning occurred through performing the group activity	04

9. In course of Professional Development-IV, department may assign teaching learning of one course outcome to one teacher and may also divide students into three batches B1, B2, B3. Simultaneously three student batch will work under the three teachers for the three course outcomes and then the batches will work for next course outcomes under remaining two teachers as per following arrangement:

	T1	T2	T3
	CO1	CO2	CO3
FIRST 20 PERIODS	B1	B2	B3
SECOND 20 PERIODS	B2	B3	B1
THIRD 20 PERIODS	B3	B1	B2

10. The concerned teacher of CO1 may Divide the batch of students under him / her into small groups ( 4-5 students)



RGPV (Diploma Wing ) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No.
								4	0	5	2	1	4
<b>COURSE NAME</b>		Professional Development-IV											
<b>CO Description</b>		Student will be able to demonstrate self-learning through joining available free online short training programmes preferably of NPTEL /MOOCs /Podcast and different online webinars related to his /her professional development											
<b>LO Description</b>		Student will be able to prepare a report on his/her self learn from attending an available free online training programme											
SCHEME OF STUDY													
S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Need of training programmes, online short training programmes for students, various sources, programme selection and joining, preparation of report about self-learning from attending the online training programme	Traditional lecture method + Case Study	Teacher will guide students regarding how to search, select and how to join the available free online short training programmes available for students. Teacher will also teach and guide students regarding how to prepare report about self-learning from the attended training programmes.	06	04	Handout, video film*	*Teacher will suggest a suitable online video to be viewed by students						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External /Internal								
1	Assessment of Student assignment	The teacher will assess the extent of student's self-learning, through examining the report prepared and submitted by the student regarding the attended online training programme	15	Rating Scale	Internal								
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
<ol style="list-style-type: none"> <li>The online students' training programme may be of duration 3 to 5 days or equivalent duration in hours</li> <li>Each student should join at-least one such online programme</li> </ol>													

3. If few students are unable to join online training programmes, then for them department / institution should organize a short training programme for them
4. Suggested format for report:-
  1. Title
  2. General information:-
    1. Name
    2. Roll number
    3. Class /semester
    4. Place and date
  3. Information regarding attended online training programme:-
    1. Name
    2. Duration, start and finish dates
    3. Organizing agency
    4. Internet link or platform
  4. My experience and learning about searching, joining and attending the online training programmes:-
    1. Major problems faced by me:-
    2. How I solved those problems:-
    3. Significant incidences:-
    4. What precautions I would take if I join similar programme in future:-
    5. What suggestions I would like to give to junior students regarding searching, joining and attending online training programmes:-
  5. My learning on topic of online training:-
  6. Signature

**5. Assessment criteria and their weights:-**

S. No.	Criteria	Max. Marks
1	Extent of <b>student's self learning regarding searching, joining and attending any online training programme</b> (based on report)	4
2	Extent of student's <b>self learning on the topic of the online training programme</b> (based on report)	4
3	Quality of student's <b>report</b> prepared on his/herself-Learning from attending the online training programme	2

6. In course of Professional Development-IV, department may assign teaching learning of each of three course outcomes to each of three teachers and may also divide students into three batches B1, B2, B3. Simultaneously three student batch will work under all the three teachers for all the three course outcomes and then the batches will work for next course outcomes under remaining two teachers as per following arrangement:

	T1	T2	T3
	CO1	CO2	CO3
FIRST 20 PERIODS	B1	B2	B3
SECOND 20 PERIODS	B2	B3	B1
THIRD 20 PERIODS	B3	B2	B1

7. The concerned teacher of CO1 may Divide the batch of students under him / her into small groups ( 4-5 students)

<b>RGPV (Diploma Wing ) Bhopal</b>	<b>SCHEME FOR LEARNING OUTCOME</b>	Branch Code			Course Code			CO Code	LO Code	Format No.
					4	0	5	2	2	<b>4</b>

<b>COURSE NAME</b>	<b>Professional Development-IV</b>
<b>CO Description</b>	<b>Student will be able to demonstrate self-learning through joining available free online short training programmes preferably of NPTEL /MOOCs /Podcast and different online webinars related to his /her professional development</b>
<b>LO Description</b>	<b>Student will be able to present his/her self-learning from attending the available online training programme through Power-Point Presentation</b>

**SCHEME OF STUDY**

S. No	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	PPP preparation and presentation skills	Traditional lecture method + Case Study	Teacher will teach skills for PPP preparation and presentation skills to the students through examples and cases, teacher will provide feedback and suggestions on each student's PPP, teacher will guide and correct students during their presentations, teacher will solve their problems	06	04	Handout, video film*	*Teacher will suggest a suitable online video to be viewed by students

**SCHEME OF ASSESSMENT**

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Assessment of Student presentation	The teacher will arrange a departmental seminar in which students will present their PPP on their self-learning from attending online training programme and teacher will assess the presentation skills of individual students.	10	Rating Scale	Internal

**ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)**

**1. Assessment criteria and their weights:-**

S. No.	Criteria	Max. Marks
1	Extent of <b>self learning</b> as reflected from the <b>PPP-contents</b>	3

<b>2</b>	Extent of <b>self-learning</b> as reflected from the student's <b>presentation</b> and related discussion	<b>3</b>
<b>3</b>	Overall quality of the PPP	<b>2</b>
<b>5</b>	Extent of appropriateness of presenter's body postures, face expressions and quality of speaking	<b>2</b>

2. In course of Professional Development-IV, department may assign teaching learning of each of three course outcomes to each of three teachers and may also divide students into three batches B1, B2, B3. Simultaneously three student batch will work under all the three teachers for all the three course outcomes and then the batches will work for next course outcomes under remaining two teachers as per following arrangement:

	T1	T2	T3
	CO1	CO2	CO3
FIRST 20 PERIODS	B1	B2	B3
SECOND 20 PERIODS	B2	B3	B1
THIRD 20 PERIODS	B3	B2	B1

<b>RGPV (Diploma Wing ) Bhopal</b>	<b>SCHEME FOR LEARNING OUTCOME</b>	Branch Code			Course Code			CO Code	LO Code	Format No.
					4	0	5	3	1	<b>4</b>

<b>COURSE NAME</b>	<b>Professional Development-IV</b>
<b>CO Description</b>	<b>Student will be able to present his/ her knowledge about given quality related concepts prevailing in industry /professions</b>
<b>LO Description</b>	<b>The student will be able to demonstrate his / her knowledge about ensuring quality in professional services offered to clients</b>

**SCHEME OF STUDY**

<b>S. No</b>	<b>Learning Content</b>	<b>Teaching – Learning Method</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>
1	Professional service, need and importance of quality in professional service, various factors affecting quality of professional service, ensuring quality in professional service	Traditional lecture method + Case Study	Teacher will teach students regarding the content through explaining cases and examples, Teacher will also provide assignment of case study with few end questions, to students and provide feedback on their submitted assignments to correct and improve their learning	06	04	Handout, video film*	*Teacher will suggest a suitable online video to be viewed by students

**SCHEME OF ASSESSMENT**

<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Resources Required</b>	<b>External /Internal</b>
1	Assessment of Student assignment	The teacher will provide a case (with four descriptive answer type questions at the end) on issues of quality in offered professional service. After studying the case, students will write answers for the five descriptive answer type questions.	10	Rating Scale	Internal

**ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)**

1. **Professional services:** - These are the services offered by the professional to his/her client.

Examples of professional services include:

- **Legal services**
- **Accounting and bookkeeping**
- **Marketing consultancy**
- **Architecture**
- **IT services, and more.**

2. **Factors affecting the quality of professional services:-**

1. **Timely and accurate assessment** of the client's need
2. **Educating the clients** regarding merits and limitations of the different services being offered
3. **Offering prompt services** to clients
4. **Offering services in accordance with standards formed** and communicated to the clients
5. **Timely and constructively handling client's doubts**, quarries and complaints
6. **Getting client's feedback or conducting clients' satisfaction surveys** about the professional services provided and improving the services
7. **Keeping Honesty and loyalty** with the client

8. **Creating trustworthiness** with the client

9. **Ensuring transparency in providing services through proper documentation** and sharing documents of services provided with the client

10. **Getting accreditation certificate, for the professional services being offered to the clients, of the related approved quality assessing agencies**

**3. Suggested list of case-end questions:-**

1. How many professional service related quality issues involved in this case?
2. Describe all the professional service related quality issues?
3. How these issues can be resolved?
4. In this case, according to you what should be the professional-client service system to ensure quality in professional services?

**5. Assessment criteria and their weights:-**

<b>S. No.</b>	<b>Criteria</b>	<b>Max. Marks</b>
1	Appropriateness of student's answer to first question	02
2	Appropriateness of student's answer to second question	02
3	Appropriateness of student's answer to third question	03
4	Appropriateness of student's answer to fourth question	03



6. In course of Professional Development-IV, department may assign teaching learning of each of three course outcomes to each of three teachers and may also divide students into three batches B1, B2, B3. Simultaneously three student batch will work under all the three teachers for all the three course outcomes and then the batches will work for next course outcomes under remaining two teachers as per following arrangement:

	T1	T2	T3
	CO1	CO2	CO3
FIRST 20 PERIODS	B1	B2	B3
SECOND 20 PERIODS	B2	B3	B1
THIRD 20 PERIODS	B3	B2	B1

<b>RGPV (Diploma Wing ) Bhopal</b>	<b>SCHEME FOR LEARNING OUTCOME</b>	Branch Code			Course Code			CO Code	LO Code	Format No.
					4	0	5	3	2	<b>4</b>

<b>COURSE NAME</b>	<b>Professional Development- IV</b>
<b>CO Description</b>	<b>Student will be able to present his/ her knowledge about given quality related concepts prevailing in industry /professions</b>
<b>LO Description</b>	<b>The student will be able to present his/her knowledge about given practices or cultures like TQM/ISO9000/Quality circle/Quality Control / Quality Audit / Six Sigma / Kaizen etc through a PowerPoint presentation</b>

#### SCHEME OF STUDY

<b>S. No</b>	<b>Learning Content</b>	<b>Teaching –Learning Method</b>	<b>Description of T-L Process</b>	<b>Teach Hrs.</b>	<b>Pract. /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>
1	Industrial practices or cultures like TQM / ISO9000 / Quality circle / quality control / quality audit / Six Sigma, kaizen etc, PP presentation skills	Traditional lecture method + Case Study	Teacher will teach concepts of various industrial practices, teacher will develop skills for PP preparation and presentation skills in the students, teacher will observe and improve student PP presentation, teacher will guide and correct students during their presentation, teacher will solve their problems and provide feedback	06	04	Handout, video film*	*Teacher will suggest a suitable online video to be viewed by students

#### SCHEME OF ASSESSMENT

<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Resources Required</b>	<b>External /Internal</b>
1	Assessment of Student presentation	The teacher will arrange a departmental seminar in which students will present their PPP on their knowledge about industrial practices teacher will assess the knowledge as well as PowerPoint Presentation of individual students.	15	Rating Scale	Internal

#### ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

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**1. Assessment criteria and their weights:-**

<b>S. No.</b>	<b>Criteria</b>	<b>Max. Marks</b>
1	Extent of understanding formed about quality practices/culture <b>as reflected from PPP contents</b>	<b>6</b>
2	Extent of understanding formed about quality practices /culture <b>as reflected from student's presentation</b>	<b>4</b>
3	Extent of relevance, appropriateness of the PPP content	<b>3</b>
4	Extent of visual effectiveness in PPP	<b>2</b>

2. In course of Professional Development-IV, department may assign teaching learning of each of three course outcomes to each of three teachers and may also divide students into three batches B1 , B2, B3. Simultaneously three student batch will work under all the three teachers for all the three course outcomes and then the batches will work for next course outcomes under remaining two teachers as per following arrangement:

	T1	T2	T3
	CO1	CO2	CO3
FIRST 20 PERIODS	B1	B2	B3
SECOND 20 PERIODS	B2	B3	B1
THIRD 20 PERIODS	B3	B2	B1