

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FOR MAT 3	Sheet No. 1/3
Branch	Civil Engineering			S e m e s t e r	IV
Course Code	401	Course Name		Advance Surveying	
Course Outcome 1	Apply basics of contouring and prepare contour map.			Teach Hrs (T+P)	Marks
Learning Outcome C0340111	Explain basics of contouring.			02	10
Contents	Definitions – Contour, contour interval, Horizontal equivalent. Characteristics of contours.				
Method of Assessment	<i>Internal: Mid Semester Exam- Pen Paper test/ Assignments</i>				
Learning Outcome C0340112	Describe methods of contouring and uses of contour.			04	10
Content	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.				
Method of assessment	<i>External: End Semester Examination- Pen Paper test</i>				
Learning Outcome C0340113	Perform contour survey and plot contour map.			12	
Contents	1. Block contouring for a block of 100x150m with spot level at 10x10m., plotting the contour.				



Method of Assessment	<i>Internal: Task/ Experiment performance in Laboratory</i>		
Course Outcome 2	Perform theodolite traversing.		
Learning Outcome C0340121	Explain components and basis terminology of theodolite and measurement of angle by different methods.	05	08
Contents	<p>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. Sources of errors in Theodolite Surveying. Permanent adjustment of transit Theodolite (only relationship of different axes of Theodolite.)</p>		
Method of Assessment	<i>External: End Semester Examination- Pen Paper test</i>		
Learning Outcome C0340122	Compute the coordinates by theodolite traversing.	05	12
Contents	<p>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.</p>		
Method of Assessment	<i>External: End Semester Examination- Pen Paper test</i>		
Learning outcome C0340123	Measure angle and coordinates by different methods using theodolite.	24	



Content	<ol style="list-style-type: none"> 1. Understanding the components of Theodolite and their functions, reading the vernier and temporary adjustments of theodolite. Measurement of Horizontal angle by transit theodolite. 2. Measurement of Horizontal angle by method of Repetition. 3. Measurement of vertical angles by theodolite. 4. Measurement of Magnetic bearing of a line using theodolite. 5. Measurement of deflection angle by taking open traverse of 4 –5 sides. 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. 		
Method of Assessment	<i>Internal: Task/ Experiment performance in Laboratory</i>		
Course outcome 3	Measure height and distance by tachometer.		
Learning Outcome C0340131	Explain techniques of Tachometric survey to calculate height and distances.	10	14
Contents	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		
Method of Assessment	<i>External: End Semester Examination- Pen Paper test</i>		
Learning Outcome C0340132	Measure height and distances using Tachometer.	06	
Contents	<ol style="list-style-type: none"> 1. To find reduced levels and horizontal distances using theodolite as a Tachometer. 2. To find constants of a given Tachometer. 		
Method of Assessment	<i>Internal: Task/ Experiment performance in Laboratory</i>		
Course Outcome 4	Develop skills to set out simple circular curve on the field.		
Learning Outcome C0340141	Explain basics of curves, components and types.	03	10
Contents	Types of curves used in road and railway alignments. Notations of simple circular curve. Designation of curve by radius and degree of curves		
Method of Assessment	<i>Internal: Mid Semester Exam- Pen Paper test/ Assignments</i>		
Learning Outcome C0340142	Describe various methods of setting out of simple circular curves.	06	14



Contents	Method of Setting out curve by offset from Long chord method and Rankine's method of deflection. Angles. Simple Numerical problems on above topics.		
Method of Assessment	<i>External: End Semester Examination- Pen Paper test</i>		
Learning Outcome C0340143	Set out simple circular curves on field and plot it.	06	
Contents	1. Setting out simple circular curve by rainkine's method and plot it.		
Method of Assessment	<i>Internal: Task/ Experiment performance in Laboratory</i>		
Course Outcome 5	Study of different advance surveying equipment and analyzing various aspect of geological feature through remote sensing.		
Learning Outcome C0340151	Describe different terminology and use of advance surveying equipment.	03	06
Contents	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		
Method of Assessment	<i>External: End Semester Examination- Pen Paper test</i>		
Learning Outcome C0340152	Explain remote sensing and its application.	04	06
Contents	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.		
Method of Assessment	<i>External: End Semester Examination- Pen Paper test</i>		
Learning Outcome C0340153	Explain the use of GPS / GIS	03	10
Contents	Introduction, definition and components, content of GIS/GPS, geological concept, application of GIS. Use of global positioning system (GPS) instruments. Introduction to drone Surveying.		
Method of Assessment	<i>Internal: Mid Semester Exam- Pen Paper test/ Assignments</i>		
Learning Outcome C0340154	Measure the angles by micro optic theodolite, geographical parameters by total station and use of GPS and GIS	12	



Contents	<ol style="list-style-type: none">1. Study and use of 1 second Micro Optic Theodolite for measurement of Horizontal and Vertical angles.2. Study of E.D.M. for knowing its components.3. Determine the geographical parameters of 4-5 sided traverse by total station and plot them.4. Use GPS to locate the coordinates of a station.
Method of Assessment	<i>Internal: Task/ Experiment performance in Laboratory</i>

