

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3		Sheet No. 1/3	
Branch	Mining and Mine surveying			Semester		II	
Course Code		Course Name	BASICS OF SURVEYING				
Course Outcome 1	To know the basic principal of survey and Mine plans.			Teach Hrs	Marks		
Learning Outcome 1	To know different terms used in surveying .			10	10		
Contents	<ul style="list-style-type: none"> <li>• Definition of surveying, objects of surveying,</li> <li>• Primary division of survey - Plane and Geodetic surveying.</li> <li>• Classification of surveying.</li> <li>• Basic principles of surveying.</li> </ul>						
Method of Assessment	Pen paper test.						
Learning Outcome 2	To know the different units of linear and angular measurement .			04	07		
Contents	<ul style="list-style-type: none"> <li>○ Linear &amp; angular measurements &amp; its units.</li> <li>○ Methods of Linear measurements – Direct measurements, Optical methods, Electronic methods.</li> </ul>						
Method of Assessment	Laboratory Assessment						
Learning Outcome 3	Demonstration of Mine Plans.			20	06		
Contents	<ul style="list-style-type: none"> <li>○ Various types of Mine Plans &amp; sections. Introduction of Mine plan, General requirement about mine plan.</li> <li>○ Conventional signs related to Mine plans. Difference between a plan &amp; a map.</li> </ul>						
Method of Assessment	Laboratory Assessment						
Course Outcome 2	Understand the principle of chain surveying & able to do chain survey in the field.			Teach Hrs	Marks		
Learning Outcome 4	To know different types of chain.			10	08		

<b>Contents</b>	<ul style="list-style-type: none"> <li>• Introduction.</li> <li>• Purpose &amp; Principle of chain surveying.</li> <li>• Equipments in chain surveying – Different type of chains – metric chain, Engineer’s chain, Günter’s chain, revenue chain.</li> </ul>		
<b>Method of Assessment</b>	Pen paper test.		
<b>Learning Outcome 5</b>	To plot the chain triangulation in the field.	04	12
<b>Contents</b>	<ul style="list-style-type: none"> <li>• Tapes &amp; its types – cloth tape, metallic tape, steel tape &amp; invar tape.</li> <li>• Ranging rods, offset rod, line ranger, cross staff – Open cross staff, French cross staff.</li> <li>• Optical square – its construction and working.</li> <li>• Different operation in chain surveying, ranging – direct &amp; indirect.</li> <li>• Chaining:- Chaining on flat &amp; slopping ground, obstacle in chaining.</li> </ul>		
<b>Method of Assessment</b>	Pen paper test		
<b>Learning Outcome 6</b>	To calculate the correction in chain surveying.	10	10
<b>Contents</b>	<p>Correction for incorrect length of chain, simple example of corrections.  Testing and adjustments of chains. Recording field notes, plotting a chainsurvey.  Degree of accuracy in chaining, Errors in chain surveying</p>		
<b>Method of Assessment</b>	Pen paper test.		
<b>Learning Outcome 7</b>	Performing chain triangulation in the field.	10	10
<b>Contents</b>	<ul style="list-style-type: none"> <li>• Chain Triangulation – Survey Station and their Selections, factors affecting selection of surveystation. Survey lines, Check lines, Tie lines, base line..</li> </ul>		

<b>Method of Assessment</b>	Laboratory Assessment.		
<b>Course Outcome 3</b>	Understand the principle and working of compass survey.	Teach Hrs	Marks
<b>Learning Outcome 8</b>	To know the definition of terms used in compass survey and construction of compass.	10	14
<b>Contents</b>	<ul style="list-style-type: none"> <li>• Purpose of compass survey.</li> <li>• Construction and working of Prismatic compass.</li> <li>• Constructional details of surveyor's compass.</li> <li>• Comparison between prismatic and surveyor's compass.</li> </ul>		
<b>Method of Assessment</b>	Pen paper test.		
<b>Learning Outcome 9</b>	To calculate the different calculations on bearings.		14
<b>Contents</b>	<ul style="list-style-type: none"> <li>• Taking observation with prismatic compass.</li> <li>• Concept of</li> <li>• Meridian – true, magnetic and arbitrary.</li> <li>• Bearings - true, magnetic and arbitrary.</li> <li>• Magnetic dip &amp; declination.</li> <li>• System of measuring the bearing – whole circle bearing, reduced bearing ( Q.B.) , problems on conversions of bearings.</li> <li>• Traverse – Open &amp; close traverse.</li> <li>• Local attraction – causes, detection, error &amp; corrections.</li> <li>• Problems on local attraction.</li> <li>• Calculations of included angle.</li> <li>• Errors in compass survey.</li> </ul>		
<b>Method of Assessment</b>	Pen paper test.		

<b>Learning Outcome 10</b>	Perform temporary adjustment of prismatic compass/ Surveyor's compass.		07
<b>Contents</b>	Taking bearing with the help of <ul style="list-style-type: none"> <li>• Prismatic compass</li> <li>• Surveyor compass</li> </ul>		
<b>Method of Assessment</b>	Laboratory Assessment.		
<b>Learning Outcome 11</b>	Taking fore & back bearing with the help of Prismatic compass .		08
<b>Contents</b>	<ul style="list-style-type: none"> <li>• Fore bearing &amp; back bearing of line &amp; their conversion.</li> </ul>		
<b>Method of Assessment</b>	Laboratory Assessment.		
<b>Course Outcome 4</b>	Understand the principle and working of plane table survey.		
		Teach Hrs	Marks
<b>Learning Outcome 12</b>	To know the definition of terms used in plane table surveying.		10
		12	
<b>Contents</b>	<ul style="list-style-type: none"> <li>• Introduction.             <ul style="list-style-type: none"> <li>• Purpose of plane table survey.</li> <li>• Temporary adjustments of Plane table - centering, leveling &amp; orientation.</li> <li>• Methods of plane table survey - Traversing, Resection method.</li> <li>• Advantages &amp; disadvantages of plane table survey.</li> <li>• Two point &amp; tree point problem.</li> </ul> </li> </ul>		

	<ul style="list-style-type: none"> <li>• Errors in plane table survey.</li> <li>• Test &amp; adjustments of plane table</li> </ul>		
<b>Method of Assessment</b>	Pen paper test.		
<b>Learning Outcome 3</b>	Demonstration of plane table and accessories.		07
<b>Contents</b>	Plane table and different accessories. Plane table Alidade Plumbing fork etc.		
<b>Method of Assessment</b>	Laboratory Assessment.		
<b>Learning Outcome 14</b>	To perform Radiation & intersection method in the field.		10
<b>Contents</b>	<ul style="list-style-type: none"> <li>• Methods of plane table survey - Radiation, Intersection, Traversing, Resection method.</li> </ul>		
<b>Method of Assessment</b>	Laboratory Assessment.		
<b>Course Outcome 5</b>	To calculate area of coal stock .	10	

<b>Learning Outcome 15</b>	To know the methods of calculation area.		14
<b>Contents</b>	<ul style="list-style-type: none"> <li>• Area of regular figures.</li> <li>• Method of calculating area of Irregular figures –</li> <li>• Method of Ordinate – Mid-ordinate Rule, Trapezoidal Rule, Simpson’s Rule.</li> <li>• Mechanical methods- by Planimeter.</li> <li>• Volume of regular solids. Volume and weight of coal. Measurement of coal stock.</li> </ul>		
<b>Method of Assessment</b>	Pen paper test		
<b>Learning Outcome 16</b>	To know the details of survey office.		06
<b>Contents</b>	<ul style="list-style-type: none"> <li>• Survey Office – Requirement of survey office, Survey Office layout.</li> <li>• Appointment of surveyor in mines.</li> <li>• Duties and responsibilities of mine surveyor.</li> </ul>		
<b>Method of Assessment</b>	Pen paper test.		

**List of experiments –**

Sl. No.	
1.	Demonstration of Mine Plans.

2.	Demonstration of metric chain in the field.
3.	Laying and ranging a chain line and taking offsets by tape on either side.
4.	Using chain and cross-staff for calculating area of a given field.
5.	Performing chain triangulation in the field.
6	Perform temporary adjustment of prismatic compass/ Surveyor's compass.
7	Taking fore & back bearing with the help of Prismatic compass/ Surveyor's compass.
8	Taking bearings with Prismatic compass and calculation of included angles from observed bearings.
9	Demonstration of plane table and accessories.
10	To conduct plane table survey by various methods.

LO s for Internal Assessment Theory Component 1,4,6/ Max marks :30

LO s for Internal Assessment Practical Component 2,3and 7/ Max marks :20

LOs for End Semester Practical Examination 10,11,13 and 14/ Max marks :30

LOs for End Semester Theory Examination 5,8,9,12,15,16/ Max marks :70