

Course Number and Name												
BCE402 - SURVEYING – II												
Credits and Contact Hours												
3 & 45												
Course Coordinator's Name												
Ms.A.Ambica												
Text Books and References												
TEXT BOOKS:												
1. Punmia B.C., " Surveying ", Vols. I, II and III, Laxmi Publications, 2005												
REFERENCES:												
1. Clark D., " Plane and Geodetic Surveying " , Vols. I and II, C.B.S. Publishers and Distributors, Delhi, sixth Edition, 1971.												
2. James M. Anderson and Edward M. Mikhail, " Introduction to Surveying ", McGraw Hill Book Company, 1985.												
3. Wolf P.R. " Elements of Photogrammetry", McGraw Hill Book Company, Second Edition, 1986.												
4. Robinson A.H., Sale R.D. Morrison J.L.andMuehrche P.C., " Elements of Cartography ", John Wiley and Sons, New York, Fifth Edition, 1984.												
5. HeribertKahmen and Wolfgang Faig, " Surverying " , Walter de Gruyter, 1995.												
6. Kanetkar T.P., " Surveying and Levelling " , Vols. I and II, United Book Corporation, Pune, 1994.												
Course Description												
<ul style="list-style-type: none"> This subject deals with geodetic measurements and Control Survey methodology and its adjustments. The student is also exposed to the Modern Surveying 												
Prerequisites						Co-requisites						
Surveying I						NIL						
required, elective, or selected elective (as per Table 5-1)												
Course Outcomes (COs)												
CO1	Have the fundamental knowledge to measure both horizontal distance and elevations without the use of sophisticated instruments											
CO2	Acquires knowledge about the principle of control surveying											
CO3	Have knowledge on the survey errors and its adjustments											
CO4	Have knowledge in the advanced topics in astronomy.											
CO5	Have knowledge to modern methods of surveying like Photogrammetry, Total station, Hydrographic survey and cartography											
Student Outcomes (SOs) from Criterion 3 covered by this Course												
	COs/SOs	a	b	c	d	e	f	g	h	i	j	k
	CO1	H			M							
	CO2	H				M						
	CO3	H			M							

	CO4	H	M	M	M							M	
	CO5	H			M							H	
List of Topics Covered													
UNIT I TACHEOMETRIC SURVEYING												6	
Tacheometric systems - Tangential, stadia and subtense methods - Stadia systems - Horizontal and inclined sights - Vertical and normal staffing - Fixed and movable hairs - Stadia constants - Anellactic lens – Subtense bar.													
UNIT II CONTROL SURVEYING												8	
Working from whole to part - Horizontal and vertical control methods - Triangulation - Signals - Base line - Instruments and accessories - Corrections - Satellite station - Reduction to centre - Trigonometric leveling – Single and reciprocal observations - Modern trends													
UNIT III SURVEY ADJUSTMENTS												8	
Errors - Sources, precautions and corrections - Classification of errors - True and most probable values - weighted observations - Method of Equal shifts - Principle of least squares - Normal equation - Correlates - Level nets - Adjustment of simple triangulation networks													
UNIT IV ASTRONOMICAL SURVEYING												11	
Celestial sphere - Astronomical terms and definitions - Motion of sun and stars - Apparent altitude and corrections - Celestial co-ordinate systems - Different time systems - Nautical almanac - Star constellations -Practical astronomy - Field observations and calculations for azimuth													
UNIT V MISCELLANEOUS												12	
Photogrammetry - Introduction - Terrestrial and aerial Photographs - Stereoscopy -Parallax – Electromagnetic distance measurement - Carrier waves - Principles - Instruments - Trilateration - Hydrographic Surveying – Tides - MSL - Location of soundings and methods - Three point problem - Study of Box - Sextants and station pointer - River surveys - Measurement of current and discharge - Cartography - Cartographic concepts and techniques - Cadastral surveying - Definition - Uses - Legal values -Scales and accuracies.													