

1.	Name of Course					Engineering Survey Field Works						
2.	Course Code					JESU1013						
	JESU = the first alphabet identify the faculty within which the subject is offered., JESU= the remaining three alphabet identify the course that offers the subject, 1013 = the first digit identify level of study; in this case undergraduate level, 1013 = the second and third digits identify subject identity and 1013= the fourth digit identify credit value or credit hours											
3.	Name(s) of academic staff					To be Assigned						
4.	Rationale for the inclusion of the course/module in the programme					Basic Civil Engineering subject, students must understand and able to carry out survey works						
5.	Semester and Year offered					2/1						
6.	Total Student Learning Time (SLT)				Face to Face				Total Guided and Independent Learning			
	L = Lecture T = Tutorial P = Practical S=Studio Works O= Survey Camp				L	T	P/S	O	Independent Study (IS)= 35 Total =126			
								S.Camp				
					-	14	42	35				
7.	Credit Value					3.0						
	Practical field work (3 hours per week x 14 weeks) Tutorial (1 hour per week x 14 weeks)											
8.	Prerequisite (if any)					Engineering Survey Camp end of semester 1 (7 hours per days x 5 days) (JESU1013)						
9.	Course Objectives											
	1. The objective of this course is to equip the students with the practical knowledge of engineering surveying and construction surveying as applied to Civil Engineering works. Aspects of setting out works and control surveys, hydrographical surveying and elementary photogrammetry are treated.											
	Course Learning Outcomes (CLO)											
	At the end of the semester students should be able to:											
	CLO1: Know the practical aspects of setting up surveying instruments, setting out, horizontal and vertical control surveys, contouring, hydrographical surveying, elementary photogrammetry and measurement of earthwork quantity.											
	CLO2: Execute the proper use and interpretation of survey data, maps and plot survey drawings.											
10.	Transferable Skills: This course is expected the development of the following transferable skills: a) Self-management – an ability to manage time and task b) Learning skills - An ability to learn both independently and co—operatively; - An ability to use library skills, to find and organize information ; - An ability to use a wide range of academic skills (research, analysis, synthesis etc.); - An ability to identify and evaluate personal learning strategies. c) Teamwork - An ability to take responsibility and carry out agreed task; - An ability to take initiative and lead other; - An ability to identify and evaluate personal learning strategy. d) Problem solving											

	▪ An ability to analyse; ▪ An ability to think laterally about a problem; ▪ An ability to identify strategy options; ▪ An ability to solve the problems e) Information technologies ▪ An ability to use specialist software where relevant to the discipline.								
11.	Teaching-learning and assessment strategy A variety of teaching strategies are used throughout the course, including the following: • Classroom Lessons; Lecturer and power point presentations • Tutorial Session; • Student-Lecturer Discussion • Collaborative and Co-operative learn; • Independent study. Assessment: <table> <tr> <td>Tutorial</td><td>10%</td></tr> <tr> <td>Practical Reports</td><td>40%</td></tr> <tr> <td>Survey Camp Assignment</td><td>50%</td></tr> <tr> <td><u>Total</u></td><td><u>100%</u></td></tr> </table>	Tutorial	10%	Practical Reports	40%	Survey Camp Assignment	50%	<u>Total</u>	<u>100%</u>
Tutorial	10%								
Practical Reports	40%								
Survey Camp Assignment	50%								
<u>Total</u>	<u>100%</u>								
12.	Synopsis: This course exposes the principles of engineering survey which is being practiced in the civil engineering works. Students will learn the aspects of setting out works and the basic principle of horizontal and vertical control measurement in the field including hydrographical surveying and elementary photogrammetry								
13.	Mode of Delivery: Practical. Tutorials.								

14.	Performance Criteria :						
	CLO-PLO	Assessment Tool	1	2	3	4	5
	Marks		0-39	40-49	50-59	60-74	75-100
	Grade		(F)	(D,D+)	(C-,C,C+)	(B-,B,B+)	(A-,A,A+)
	CLO1: Know the practical aspects of setting up surveying instruments, setting out, horizontal and vertical control surveys, contouring, hydrographical surveying, elementary photogrammetry and measurement of earthwork quantity.	Tutorial Practical Reports Survey Camp Assignment	Fail to: • Know the practical aspects of:- setting up surveying instruments and operate them • setting out works horizontal and vertical control surveys contouring • measurement of earthwork quantity • hydrographical surveying • elementary photogrammetry	Poor to: • Know the practical aspects of:- setting up surveying instruments and operate them • setting out works horizontal and vertical control surveys contouring • measurement of earthwork quantity • hydrographical surveying - elementary photogrammetry	Satisfactory to: • Know the practical aspects of:- setting up surveying instruments and operate them • setting out works horizontal and vertical control surveys contouring • measurement of earthwork quantity • hydrographical surveying - elementary photogrammetry	Good to: • Know the practical aspects of:- setting up surveying instruments and operate them • setting out works horizontal and vertical control surveys contouring • measurement of earthwork quantity • hydrographical surveying - elementary photogrammetry	Excellent to: • Know the practical aspects of:- setting up surveying instruments and operate them • setting out works horizontal and vertical control surveys contouring • measurement of earthwork quantity • hydrographical surveying - elementary photogrammetry

	CLO2: Execute the proper use and interpretation of survey data, maps and plot survey drawings	Tutorial Practical Reports Survey Camp Assignment	Fail to: • Know to interpret survey data and compute • Know to plot survey drawings	Poor to: • Know to interpret survey data and compute Know to plot survey drawings	Satisfactory to: • Know to interpret survey data and compute Know to plot survey drawings	Good to: • Know to interpret survey data and compute Know to plot survey drawings	Excellent to: • Know to interpret survey data and compute Know to plot survey drawings
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15.	Mapping of the Programme Objectives to the Programme Learning Outcomes										
Programme Learning Outcomes (PLO) Programme Objectives (PO)	PLO1: Ability to acquire and apply knowledge of science and engineering fundamentals;	PLO2: Acquired in-depth technical competence in civil engineering discipline;	PLO3: Ability to undertake problem identification, formulation and solution;	PLO4: Ability to utilize systems approach to design and evaluate operational performance;	PLO5: Understanding of the principles of design for sustainable development;	PLO6: Understanding of professional ethics, Islamic values, social, cultural, global and environmental responsibilities of a professional engineer and commitment to them;	PLO7: Ability to communicate effectively, not only with engineers but also with the community at large;	PLO8: ability to function effectively as an individual;	PLO9: Ability to function effectively in group with the capacity to be a leader or manager;	PLO10: Recognizing the need to undertake lifelong learning, and possessing /acquiring the capacity to do so;	PLO11: ability to become Entrepreneur;
	PEO1: To produce graduates with proficient knowledge and competency in various areas in Civil/ Electrical/ Mechanical Engineering	✓	✓	✓							
	PEO2: To produce graduates with professional, generic attributes to meet the present and future global demands.				✓	✓	✓			✓	✓
	PEO3: To produce graduates with Islamic humanistic values and reinvention skills to meet the requirement of a dynamic environment. These skills include Civil Intelligence, Moral Intelligence, Self-Reliance and Communication Skills							✓	✓	✓	✓

16.	Mapping of the course Learning Outcome to the Programme Outcome										
Programme Learning Outcomes (PLO) Course Learning Outcome (CLO)	PLO1: Ability to acquire and apply knowledge of science and engineering fundamentals;	PLO2: Acquired in-depth technical competence in civil engineering discipline;	PLO3: Ability to undertake problem identification, formulation and solution;	PLO4: Ability to utilise systems approach to design and evaluate operational performance;	PLO5: Understanding of the principles of design for sustainable development;	PLO6: Understanding of professional ethics, Islamic values, social, cultural, global and environmental responsibilities of a professional engineer and commitment to them;	PLO7: Ability to communicate effectively, not only with engineers but also with the community at large;	PLO8: ability to function effectively as an individual;	PLO9: Ability to function effectively in group with the capacity to be a leader or manager;	PLO10: Recognising the need to undertake lifelong learning, and possessing /acquiring the capacity to do so;	PLO11: ability to become Entrepreneur;
	CLO1: Know the practical aspects of setting up surveying instruments, setting out, horizontal and vertical control surveys, contouring, hydrographical surveying, elementary photogrammetry and measurement of earthwork quantity.	✓									
	CLO2: Execute the proper use and interpretation of survey data, maps and plot survey drawings	✓									

17.	Content outline of the course/module and the SLT per topic							
	Topic 1	1. Engineering Survey Principle 2. Chain Survey Measurement 3. Prismatic Compass 4. Plane Tabling 5. Introduction to level Survey equipment 6. Level measurement 7. Level Survey Grid measurement 8. Introduction to theodolite equipment 9. Closed traverse 10. Tradia traverse survey 11. Contouring 12. Area and Volume 13. Marking measurement for building/curve	SLT (Hour)					
			L	T	P/S	Survey Camp	IS	Total
			-	14	42	35	35	126
Total (Hour)			-	14	42	35	35	126
18.	Main references supporting the course							
	1. Surveying: Principles and Applications (8th Edition) by Barry F. Kavanagh (Jul 31, 2008) 2. Construction Surveying and Layout: A Step-By-Step Field Engineering Methods Manual (3rd Edition) by Wesley G. Crawford (Dec 23, 2002) 3. Engineering Surveying, Sixth Edition by W. Schofield and Mark Breach (Apr 27, 2007)							
19.	Additional references supporting the course							
	1. Practical Field Surveying and Computations, 5 th .ed. Allan A.L., J.R. Hollwey and J.A.B. Meynes, William Heineman Ltd., London 1977 2. Bannister A., Raymond S., Surveying. Longman 1993 3. Wschofied, 2001, " engineering surveying " 5th ed. Butterwort							
19.	Other additional information All materials will be available to the students in the library.							