

1.	Name of Course					Civil Engineering Construction				
2.	Course Code					JECO3093				
	JECO= the first alphabet identify the faculty within which the subject is offered., JECO= the remaining three alphabet identify the course that offers the subject, 3093 = the first digit identify level of study; in this case undergraduate level, 3093 = the second and third digits identify subject identity and 3093= 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					To develop student’s ability in working at site and enable them to develop the skills required for working environment and occupational tasks.				
5.	Semester and Year offered					2/2				
6.	Total Student Learning Time (SLT)			Face to Face			Total Guided and Independent Learning			
	L = Lecture T = Tutorial P = Practical S=Studio Works O= Others			L	T	P/S	O	Independent Study(IS)= 84 Total =126		
				42	-	-	-			
7.	Credit Value					3.0				
	Lecture (3 hours per week x 14 weeks)									
8.	Prerequisite (if any)					None				
9.	Course Objectives 1. To provide the students with the understanding of the different types of civil engineering construction Course Learning Outcomes (CLO) At the end of the semester students should be able to: CLO1: Know the preliminary works required prior to construction of civil engineering works CLO2: Know the different types of civil engineering construction workand the different techniques of civil engineering construction method CLO3: Know the construction plants and equipment used in civil engineering construction and selection of the appropriate plants for more cost effectiveness CLO4: Know the types of formworks and scaffolding for temporary and permanent structural works									
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>Coursework</td><td>40%</td></tr> <tr> <td>Assignment</td><td>10%</td></tr> <tr> <td>Quizzes</td><td>10%</td></tr> <tr> <td>Tests</td><td>20%</td></tr> <tr> <td>Examination</td><td>60%</td></tr> <tr> <td><u>Total</u></td><td><u>100%</u></td></tr> </table>	Coursework	40%	Assignment	10%	Quizzes	10%	Tests	20%	Examination	60%	<u>Total</u>	<u>100%</u>
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<u>Total</u>	<u>100%</u>												
12.	Synopsis: This course introduces the students to civil engineering construction works which included earthwork, foundation, earth retaining structures, structures, infrastructures and the construction methods. The different types of construction plants and equipment generally used in civil engineering construction works are also introduced.												
13.	Mode of Delivery: Lectures.												

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 preliminary works required prior to construction of civil engineering work	Assignment Quizzes Test Examination	Fail to: • Know the preliminary works required prior to commencement of construction works • Learn the methods used to undertake the site investigation works • Learn how to do setting out surveys • Know how to undertake utilities detection, mapping and relocation works	Poor to: • Know the preliminary works required prior to commencement of construction works • Learn the methods used to undertake the site investigation works • Learn how to do setting out surveys • Know how to undertake utilities detection, mapping and	Satisfactory to: • Know the preliminary works required prior to commencement of construction works • Learn the methods used to undertake the site investigation works • Learn how to do setting out surveys • Know how to undertake utilities detection, mapping and	Good to: • Know the preliminary works required prior to commencement of construction works • Learn the methods used to undertake the site investigation works • Learn how to do setting out surveys • Know how to undertake utilities detection,	Excellent to: • Know the preliminary works required prior to commencement of construction works • Learn the methods used to undertake the site investigation works • Learn how to do setting out surveys • Know how to undertake utilities detection, mapping and

				relocation works	relocation works	mapping and relocation works	relocation works
	CLO2: Know the different types of civil engineering construction work and the different techniques of civil engineering construction method	Assignment Quizzes Test Examination	Fail to: • Know the various activities of earthworks and their construction method • Know the different types of foundation and their construction methods • Know the various type of earth retaining structures and their construction methods • Know the different types of structures and their construction methods • Know the	Poor to: • Know the various activities of earthworks and their construction method • Know the different types of foundation and their construction methods • Know the various type of earth retaining structures and their construction methods • Know the different types of structures and their construction methods • Know the	Satisfactory to: • Know the various activities of earthworks and their construction method • Know the different types of foundation and their construction methods • Know the various type of earth retaining structures and their construction methods • Know the different types of structures and their construction methods • Know the	Good to: • Know the various activities of earthworks and their construction method • Know the different types of foundation and their construction methods • Know the various type of earth retaining structures and their construction methods • Know the different types of structures and their construction methods • Know the	Excellent to: • Know the various activities of earthworks and their construction method • Know the different types of foundation and their construction methods • Know the various type of earth retaining structures and their construction methods • Know the different types of structures and their construction methods • Know the

			various types of infrastructures and their construction methods • Learn the trenchless excavation methods and the types of machinery and equipment used • Learn the methods of tunnel construction and the types of machinery used • Know the Industrialized Building System (IBS) of construction	various types of infrastructures and their construction methods • Learn the trenchless excavation methods and the types of machinery and equipment used • Learn the methods of tunnel construction and the types of machinery used • Know the Industrialized Building System (IBS) of construction	various types of infrastructures and their construction methods • Learn the trenchless excavation methods and the types of machinery and equipment used • Learn the methods of tunnel construction and the types of machinery used • Know the Industrialized Building System (IBS) of construction	various types of infrastructures and their construction methods • Learn the trenchless excavation methods and the types of machinery and equipment used • Learn the methods of tunnel construction and the types of machinery used • Know the Industrialized Building System (IBS) of construction	various types of infrastructures and their construction methods • Learn the trenchless excavation methods and the types of machinery and equipment used • Learn the methods of tunnel construction and the types of machinery used • Know the Industrialized Building System (IBS) of construction
CLO3: Know the construction plants and equipment used in civil engineering	Assignment Quizzes Test	Fail to: • Know the different types earth moving plants and their	Poor to: • Know the different types earth moving plants and their	Satisfactory to: • Know the different types earth moving plants and their	Good to: • Know the different types earth moving plants and their	Excellent to: • Know the different types earth moving plants and their	

	construction and selection of the appropriate plants for cost effectiveness	Examination	specific functions • Know the types of Lifting plants and hoisting equipment used in construction • Learn how to select the appropriate plants and equipment for cost effectiveness of a construction project	specific functions • Know the types of Lifting plants and hoisting equipment used in construction • Learn how to select the appropriate plants and equipment for cost effectiveness of a construction project	specific functions • Know the types of Lifting plants and hoisting equipment used in construction • Learn how to select the appropriate plants and equipment for cost effectiveness of a construction project	specific functions • Know the types of Lifting plants and hoisting equipment used in construction • Learn how to select the appropriate plants and equipment for cost effectiveness of a construction project	specific functions • Know the types of Lifting plants and hoisting equipment used in construction • Learn how to select the appropriate plants and equipment for cost effectiveness of a construction project
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	CLO4: Know the types of formworks and scaffolding for temporary and permanent structural works	Assignment Quizzes Test Examination	Fail to: • Know the different types of formworks used for construction of structures and their installation methods. • Know the different types of scaffoldings used for construction of temporary and permanent structures and their installation methods.	Poor to: • Know the different types of formworks used for construction of structures and their installation methods. • Know the different types of scaffoldings used for construction of temporary and permanent structures and their installation methods.	Satisfactory to: • Know the different types of formworks used for construction of structures and their installation methods. • Know the different types of scaffoldings used for construction of temporary and permanent structures and their installation methods.	Good to: • Know the different types of formworks used for construction of structures and their installation methods. • Know the different types of scaffoldings used for construction of temporary and permanent structures and their installation methods.	Excellent to: • Know the different types of formworks used for construction of structures and their installation methods. • Know the different types of scaffoldings used for construction of temporary and permanent structures and their installation methods.
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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 preliminary works required prior to construction of civil engineering work	✓									
	CLO2: Know the different types of civil engineering construction work and the different techniques of civil engineering construction method	✓									
	CLO3: Know the construction plants and equipment used in civil engineering construction and selection of the appropriate plants for cost effectiveness	✓	✓	✓							

	CLO4: Know the types of formworks and scaffolding for temporary and permanent structural works	✓	✓	✓								
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17.

Content outline of the course/module and the SLT per topic						
	Details	SLT (Hour)				
		L	T	P	IS	Total
Topic 1	Preliminary Works - Site investigation - Stage involves - Methods - Site survey and setting out - Detection and relocation of the exiting utilities and services	3	-	-	6	9
Topic 2	Earthworks - Construction and embankment - Excavation - Mass haul diagram - Compaction - Ground improvement works - Drainage - Dewatering	6	-	-	12	18
Topic 3	Topic 3 Earthwork moving Plants - Excavators - Compactors - scrappers - Graders - Dozers - Dump trucks - Loaders	4	-	-	8	12
Topic 4	Foundation - Piling - Underpinning And shoring - Footing , rafts	3	-	-	6	9
Topic 5	Tunneling and Trenching - Trenchless excavation methods - Methods tunneling	6	-	-	12	18
Topic 6	Earth Retaining structures - Retaining walls - Rock Anchors - Soil nailing - Reinforced earth - Grouting	4	-	-	8	12

	Topic 7	Structures - Type of structure - Steel - Concrete - Timber - Buildings - Bridges - Water and wastewater Treatment plants - Dams - marine structures	4	-	-	8	12
	Topic 8	Infrastructures - Roads - Drainage - Water supply - Sewerage	3	-	-	6	9
	Topic 9	Hoisting and Lifting Plants - Cranes - Mobile - Fixed - Lifts - Hoists and elevators - Men - Materials	6	-	-	12	18
	Topic 10	Formwork - Timber - Steel - Scaffolding - Flying form - Slip form	3	-	-	6	9
	Total (Hour)		42	-	-	84	126
18.	Main references supporting the course						
	1. B. Cooke, construction practice, wiley-blackwell, 2011						
19.	Additional references supporting the course						
	1. N. A. Trenter, Earthworks: A Guide, Thomas Telford						
19.	Other additional information						
	All materials will be available to the students in the library.						