

UNIT CODE	EABQ 2204A
UNIT NAME	BUILDING SERVICES(ELECTRICAL)
CLASS	B.Tech Building Construction (EABI/2020)
LECTURER	Eng. BENARD MUMO MAKAA, PE. Email:ben@benardmakaa.com Website:www.benardmakaa.com Phone.+254716518555

Course Textbooks			
1		John Bird, (2017), <i>Electrical Circuit Theory and Technology</i> , Routledge.	
2		Ozgur Ergul (2017), <i>Introduction to Electrical Circuit Analysis</i> , Wiley.	
3		Frederick Merritt and James Ambrose (1990), <i>Building Engineering and Systems Design</i> .	
3		Linsley, Trevor (2019), <i>Basic electrical installation work</i> , Routledge.	
COURSE OUTLINE			
CONTENT			HOURS
1	Electric circuit Theory	Units associated with basic electrical quantities, Standard symbols for electrical components, Potential difference and resistance, and current, Basic electrical measuring instruments, Ohm's law, Resistivity, Temperature coefficient, Conductors and insulators, Electrical power and energy, Kirchhoff's laws	6
2	Electrical Circuits, Capacitors and Inductors	Series circuits, Parallel networks. Capacitors and Inductors	6
3	Electrical Energy & Power	Importance of Electrical Energy, Generation of Electrical Energy, Sources of energy, Unit of electrical energy, Types of fuels, Electrical Power Supply, Single phase, Three Phase, Electrical transmission, Distribution systems	6

4	Electrical Supply and Distribution	Single Phase Electric Power, Three Phase Electric Power, Private Sub-station/transformer, Electricity Intake to a Building, Distribution Board, Power Distribution Circuits, Manholes, Service Boxes.	6
CAT 1			
5	Light and Lighting Design	Light Effects. Lighting Terminologies. Quality characteristics of lighting. Light colour. Energy Control. Types of Lighting Lambs. Light Fittings. Lighting Switching Circuits. Lighting Circuits. Lighting Design Methods. Recommended Typical Illumination Levels.	8
6	Fire Detection & Alarm Design	Definitions. Choice of Detectors. Types of Smoke Detectors. Smoke Detector Spacing. Control Equipment. Sounders and strobes. Level of Protection/ System Category. Cabling Considerations. Communication with the Fire Service	8
7	Fire Fighting and Protection	Fire Loads and Resistance Ratings. Classes of Fires. Fire Extinguishment. Chemical Extinguishing Systems. Emergency Egress. Fire Protection. Systems Design for Fire Protection. Systems Design for Life Safety.	4
8	Basic protection and fault protection	Protecting electrical equipment, circuits and people. Fault protection. Isolation and switching.	4
CAT 2			