Module code	TG-2305			
Module Title	Circuits and Systems			
Degree/Diploma	Bachelor of Engineering Degree			
Type of Module	Major Option			
Modular Credits	4	**Total student workload**	8	hours/week
		Contact hours	4	hours/week
Prerequisite	None			
Anti-requisite	None			

Aims

The aim of this module is to give an in depth understanding of how to analyse electrical circuits and systems. The module covers electrical circuit laws, their application to resistor, inductor and capacitor circuits. The use of measuring equipment and transform domain analysis.

Learning Outcomes:

On successful completion of this module, a student will be expected to be able to:

Lower order :	30%	- understand the basic principles of circuits using R, C and L
Middle order :	40%	- analyse the performance of circuits by applying basic circuit theorems - collect and analyse data
Higher order:	30%	- use laboratory equipment to obtain data from electronic circuits - present information and arguments for justification in written communications

Module Contents

- DC circuits
- Kirchhoff's current & voltage law equations
- RC, RL and RLC Circuits
- Thevenin's, Norton's and superposition theorems
- Source transformation, parallel/series element combinations
- Sinusoidal and steady state analysis
- Operational Amplifier circuits
- Average and RMS power
- Linear models for transistor and diodes
- Transfer function
- Analysis in frequency domain
- S-domain analysis
- Laplace transform
- Wye-Delta transformation
- Linear and Ideal Transformers

Assessment	Formative assessment	Online multiple choice questions will be used to test and give feedback on their learning
	Summative assessment	Examination: 50%
		Coursework: 50% - 2 online tests (10% each) - 2 laboratory assignments (15% each)