

ANAL H3601: Analysis of Analogue Circuits

Modulo Title:				
Credits: 10 NFQ Level: 7 Module Delivered In 3 programme(s). Teaching & Learning Strategies: (a) This will take the form of problem-based learning during lectures and practical classes. (b) An emphasis will be placed on relating individual circuits to useful application systems both in theory and practical classes. (c) Circuit simulation software may be used in the problem-solving sessions to validate student solutions. Module Aim: To give the students the specialised knowledge, technical competencies and conceptual skills to: (a) Evaluate the performance of a multi-stage voltage amplifier. (b) Analyse and use commercial data conversion and filter devices. (c) Describe and calculate the frequency responses of passive and active filters. (d) Analyse the operation of power electronic circuits. Learning Outcomes Conversion and filter devices. (c) Describe and calculate the frequency responses of passive and active filters. L01 Evaluate the performance of a multi-stage voltage amplifier. L02 Evaluate the performance of a power amplifier. L03 Analyse and design a special-purpose amplifier. L04 Analyse and design a special-purpose amplifier. L05 Analyse and design the response of passive and active filters. L06 Analyse and design the response of passive and active filters. L06 Analyse and use commercial data conversion and filter devices. L06 Anal	Module Title:		Analysis of Analogue Circuits	
NFQ Level: 7 Module Delivered In 3 programme(s) Teaching & Learning (a) This will take the form of problem-based learning during lectures and practical classes. (b) An emphasis will be placed on relating individual circuits to useful application systems both in theory and practical classes. (c) Cruit simulation software may be used in the problem-solution systems both in theory and practical classes. (c) Cruit simulation software may be used in the problem-solution systems both in theory and practical classes. (c) Cruit simulation software may be used in the problem-solution solutions. Module Alm: To give the students the specialised knowledge, technical competencies and conceptual skills to: (a) Evaluate the performance of a multi-stage voltage amplifier. (b) Analyse and use commercial data conversion and filter devices. (c) Describe and calculate the functione circuits. Learning Outcomes To give the students the specialised knowledge, technical competencies and conceptual skills to: (a) Evaluate the performance of a multi-stage voltage amplifier. L01 Evaluate the performance of a multi-stage voltage amplifier. L02 Evaluate the performance of a multi-stage voltage amplifier. L03 Analyse and design a special-purpose amplifier. L04 Analyse and design the response of passive and active filters. L05 Analyse and design the response of passive and active filters. L06 Analyse and design the response of passive and active filters. L06 Analyse a	Language of Instruction:		English	
Module Delivered In 3 programme(s) Teaching & Learning Strategies: (a) This will take the form of problem-based learning during lectures and practical classes. (b) An emphasis will be placed on relating individual circuits to useful application systems both in theory and practical classes. (c) Clas	Credits:	10		
Teaching A This will take the form of problem-based learning during lectures and practical classes. (b) An emphasis will be placed on relating individual circuits to useful application systems both in theory and practical classes. (c) Circuit simulation software may be used in the problem-solving sessions to validate student solutions. Module Aim: To give the students the specialised knowledge, technical competencies and conceptual skills to: (a) conversion and filter devices. (c) Describe and calculate the frequency responses of passive and active filters. (d) Analyse the operation of power electronic circuits. Learning Outcomes On successful completion of this module the learner should be able to: L01 Evaluate the performance of a multi-stage voltage amplifier. L02 Evaluate the performance of a power amplifier. L03 Analyse and design a special-purpose amplifier. L04 Analyse and design a special-purpose amplifier. L05 Analyse and design the response of passive and active filters. L06 Analyse and design the response of passive and active filters. L06 Analyse and design the response of passive and active filters. L06 Analyse and design the response of passive and active filters. L06 Analyse and design the response of passive and active filters. L06 Analyse and design the response of passive and active filters. L06 Analysen de design the resp	NFQ Level:	7		
Strategiës: will be placed on relating individual circuits to useful application systems both in theory and practical classes. (c) Circuit simulation software may be used in the problem-solving sessions to validate student solutions. Module Aim: To give the students the specialised knowledge, technical competencies and conceptual skills to: (a) Evaluate the performance of a multi-stage voltage amplifier. (b) Analyse and use commercial data conversion and filter devices. (c) Describe and calculate the frequency responses of passive and active filters. (d) Analyse the operation of power electronic circuits. Learning Outcomest Evaluate the performance of a multi-stage voltage amplifier. (D) Analyse and use commercial data conversion and filter devices. (c) Describe and calculate the frequency responses of passive and active filters. (d) Analyse the operation of power electronic circuits. LO1 Evaluate the performance of a multi-stage voltage amplifier. LO2 Evaluate the performance of a power amplifier. LO3 Analyse and use commercial data conversion and filter devices. LO4 Analyse and design a special-purpose amplifier. LO5 Analyse and design the response of passive and active filters. LO6 Analyse and design the response of passive and active filters. LO5 Analyse the operation of power electronic circuits. Pre-requistL Evaluate the performance of a power amplifier. LO5 Analyse and design the response of passive and active filters. <	Module Deliv	vered In	3 programme(s)	
Evaluate the performance of a multi-stage voltage amplifier, (b) Analyse and use commercial data conversion and filter devices. (c) Describe and calculate the frequency responses of passive and active filters. (d) Analyse the operation of power electronic circuits. Learning Outcomes Image: Completion of this module the learner should be able to: L01 Evaluate the performance of a multi-stage voltage amplifier. L02 Evaluate the performance of a power amplifier. L03 Analyse and use commercial data conversion and filter devices. L04 Analyse and design a special-purpose amplifier. L05 Analyse and design the response of passive and active filters. L05 Analyse the operation of power electronic circuits. Pre-requisite tearning Module Recommendations Tris is prior learning (or a practical skill) that is recommended before enrolment in this module. No recommendations These are modules which have learning outcomes that are too similar to the learning outcomes of this module. No incompatible modules listed Co-requisite modules listed Co-requisite modules listed Requirements No Co-requisite modules listed Seconde enrolment in this module is allowed.			will be placed on relating individual circuits to useful application systems both in theory and practical classes. (c) Circuit simulation software may be used in the problem-solving sessions to validate student	
On successful completion of this module the learner should be able to: LO1 Evaluate the performance of a multi-stage voltage amplifier. LO2 Evaluate the performance of a power amplifier. LO3 Analyse and use commercial data conversion and filter devices. LO4 Analyse and design a special-purpose amplifier. LO5 Analyse and design the response of passive and active filters. LO6 Analyse the operation of power electronic circuits. Pre-requisite learning Module Recommendations This is prior learning (or a practical skill) that is recommended before enrolment in this module. No recommendations listed Incompatible Modules These are modules which have learning outcomes that are too similar to the learning outcomes of this module. No incompatible modules listed Co-requisite modules listed Co-requisite modules listed Requirements No Co-requisite modules listed Requirements No co-requisite modules listed Requirements No incompatible modules listed Requirements Tris is prior learning (or a practical skill) tha	Module Aim:		Evaluate the performance of a multi-stage voltage amplifier. (b) Analyse and use commercial data conversion and filter devices. (c) Describe and calculate the frequency responses of passive and active	
LO1 Evaluate the performance of a multi-stage voltage amplifier. LO2 Evaluate the performance of a power amplifier. LO3 Analyse and use commercial data conversion and filter devices. LO4 Analyse and design a special-purpose amplifier. LO5 Analyse and design the response of passive and active filters. LO6 Analyse the operation of power electronic circuits. Pre-requisite learning Module Recommendations This is prior learning (or a practical skill) that is recommended before enrolment in this module. No recommendations listed Incompatible Modules These are modules which have learning outcomes that are too similar to the learning outcomes of this module. No incompatible modules listed Co-requisite modules listed Requirements Requirements No Co-requisite modules listed Requirements Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	Learning Ou	tcomes		
LO2 Evaluate the performance of a power amplifier. LO3 Analyse and use commercial data conversion and filter devices. LO4 Analyse and design a special-purpose amplifier. LO5 Analyse and design the response of passive and active filters. LO6 Analyse the operation of power electronic circuits. Pre-requisite learning Module Recommendations This is prior learning (or a practical skill) that is recommended before enrolment in this module. No recommendations listed Incompatible Modules These are modules listed Incompatible modules listed No incompatible modules listed Requirements Requirements The is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	On successful completion of this module the learner should be able to:			
LO3 Analyse and use commercial data conversion and filter devices. LO4 Analyse and design a special-purpose amplifier. LO5 Analyse and design the response of passive and active filters. LO6 Analyse the operation of power electronic circuits. Pre-requisite learning Module Recommendations This is prior learning (or a practical skill) that is recommended before enrolment in this module. No recommendations listed Incompatible Modules These are modules which have learning outcomes that are too similar to the learning outcomes of this module. No incompatible modules listed Co-requisite modules listed Requirements Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	LO1	Evaluate the performance of a multi-stage voltage amplifier.		
LO4 Analyse and design a special-purpose amplifier. LO5 Analyse and design the response of passive and active filters. LO6 Analyse the operation of power electronic circuits. Pre-requisite learning Module Recommendations This is prior learning (or a practical skill) that is recommended before enrolment in this module. No recommendations listed Incompatible Modules These are modules which have learning outcomes that are too similar to the learning outcomes of this module. No incompatible modules listed Co-requisite Modules No Co-requisite modules listed Requirements Requirements	LO2	Evaluate the pe	he performance of a power amplifier.	
LO5 Analyse and design the response of passive and active filters. LO6 Analyse the operation of power electronic circuits. Pre-requisite learning Module Recommendations This is prior learning (or a practical skill) that is recommended before enrolment in this module. No recommendations listed Incompatible Modules These are modules which have learning outcomes that are too similar to the learning outcomes of this module. No incompatible modules listed Co-requisite Modules No Co-requisite modules listed Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	LO3	Analyse and us	e commercial data conversion and filter devices.	
LOG Analyse the operation of power electronic circuits. Pre-requisite learning Module Recommendations This is prior learning (or a practical skill) that is recommended before enrolment in this module. No recommendations listed Incompatible Modules These are modules which have learning outcomes that are too similar to the learning outcomes of this module. No incompatible modules listed Co-requisite Modules No Co-requisite modules listed Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	LO4	Analyse and de	sign a special-purpose amplifier.	
Pre-requisite learning Module Recommendations This is prior learning (or a practical skill) that is recommended before enrolment in this module. No recommendations listed Incompatible Modules These are modules which have learning outcomes that are too similar to the learning outcomes of this module. No incompatible modules listed Co-requisite Modules No Co-requisite modules listed Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	LO5	Analyse and de	sign the response of passive and active filters.	
Module Recommendations This is prior learning (or a practical skill) that is recommended before enrolment in this module. No recommendations listed Incompatible Modules These are modules which have learning outcomes that are too similar to the learning outcomes of this module. No incompatible modules listed Co-requisite Modules No Co-requisite modules listed Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	LO6	Analyse the operation of power electronic circuits.		
This is prior learning (or a practical skill) that is recommended before enrolment in this module. No recommendations listed Incompatible Modules These are modules which have learning outcomes that are too similar to the learning outcomes of this module. No incompatible modules listed Co-requisite Modules No Co-requisite modules listed Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	Pre-requisite	e learning		
Incompatible Modules These are modules which have learning outcomes that are too similar to the learning outcomes of this module. No incompatible modules listed Co-requisite Modules No Co-requisite modules listed Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.			ctical skill) that is recommended before enrolment in this module.	
These are modules which have learning outcomes that are too similar to the learning outcomes of this module. No incompatible modules listed Co-requisite Modules No Co-requisite modules listed Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	No recomme	ndations listed		
Co-requisite Modules No Co-requisite modules listed Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.			e learning outcomes that are too similar to the learning outcomes of this module.	
No Co-requisite modules listed Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	No incompatible modules listed			
Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	Co-requisite	Modules		
This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	No Co-requisite modules listed			
Analogue Electronic Systems or equivalent, Mathematics 2 or equivalent			ctical skill) that is mandatory before enrolment in this module is allowed.	
	Analogue Ele	ectronic Systems	or equivalent, Mathematics 2 or equivalent	



ANAL H3601: Analysis of Analogue Circuits

Module Content & Assessment

Indicative Conte	ent				
(a) Multistage A Capacitively and		iers t-Coupled Amplifiers.			
(b) Power Ampli Class A, B & AB					
(c) Data Conversion Sample & Hold A		Circuits iers; DAC Circuits; Integrating, Successive-Approximation & Flash AL	DCs.		
(d) Special Purp Instrumentation A	ose /	Amplifiers fiers; OTA Ampifiers; Log and Antilog Amplifiers.			
(e) Filters Response Chara	cteris	tics; Active LP, HP, BP & BS filters; Active Filter Design; Commercial	filter ICs.		
(f) Power Electro Power Control Ci	onics ircuits	s using SCRs & triacs.			
Assessment Breakdown %					
Continuous Assessment 2			20.00%	20.00%	
Practical 20.00%			20.00%	00%	
End of Module Formal Examination				60.00%	
Continuous Ass	sessn	nent			
Assessment Type	е	Assessment Description	Outcome addressed	% of total	Assessment Date
Examination		Students will sit a written examination during the module.	1,2,3,4	20.00	n/a
No Project					
Practical					
Assessment Type	As	sessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	wit of	ch student will complete a set of practical assignments together h brief reports during the module, for which a maximum total mark 20% will be awarded. Each assignment will test the ability of the ident to apply the course theory to a practical problem.	1,2,3,4,5	20.00	n/a

End of Module Formal Examination					
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date	
Formal Exam	A final written examination will test the student's ability to demonstrate the learning outcomes.	1,2,3,4,5,6	60.00	End-of- Semester	

SETU Carlow Campus reserves the right to alter the nature and timings of assessment



ANAL H3601: Analysis of Analogue Circuits

Module Workload

Workload: Full Time				
Workload Type	Frequency	Average Weekly Learner Workload		
Lecture	Every Week	4.00		
Practicals	Every Week	3.00		
Independent Learning	Every Week	3.00		
	Total Hours	10.00		

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_EEBEE_B	Bachelor of Engineering (Honours) in Biomedical Electronics	5	Mandatory
CW_EESYS_B	Bachelor of Engineering (Honours) in Electronic Engineering	5	Mandatory
CW_EEBEE_D	Bachelor of Engineering in Biomedical Electronics	5	Mandatory