



Unit Assessment Record (UAR)

Analogue Circuits

(D3PG 04)

Credit Value: 2.0

NB: After entering your personal details please pass this document to your tutor for completion and eventual return to COLU. You may wish to retain a copy for your own use.

TITLE:	SURNAME:	UNIT TUTOR:
FORENAME(s):	CENTRE:	
HOME ADDRESS:	ADDRESS:	
.....	
.....	
POST CODE:	POST CODE:	
HOME TEL:	TEL NO:	
WORK TEL:	FAX NO:	
FAX NO:	E-MAIL:	
E-MAIL:	CENTRE CONTACT:	

SQA REG. NO:	UNIT START DATE:
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AUTHENTICATION OF EVIDENCE – INTERVIEW	DATE:
PORTFOLIO OF EVIDENCE AVAILABLE	<input type="checkbox"/>
EVIDENCE AUTHENTICATED	<input type="checkbox"/>
ALL OUTCOMES SATISFIED	<input type="checkbox"/>
Please initial as appropriate	
NOTES:	
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GRADE	REFER	PASS	MERIT	
FINAL GRADE:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Please initial as appropriate
ASSESSOR:				DATE:



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Evidence Log – For each of the performance criteria please clearly identify the evidence within the portfolio that satisfies the criterion fully with respect to the range and evidence requirements as stated in the unit specification.

1) Evaluate the performance of operational amplifiers

TMA Evidence

Supplementary Evidence & Location

- (a) Operational amplifier characteristics are correctly interpreted in relation to practical circuit applications.
- (b) The circuit elements of an integrated circuit operational amplifier are correctly related to the device's operation and fabrication.
- (c) Estimations of the frequency and pulse response of an operational amplifier are correct in terms of bandwidth, frequency compensation, slew rate and rise time.

2) Design, construct and test operational amplifier circuits

- (a) Analysis of the effects of feedback upon an amplifier's properties are correct.
- (b) Operational amplifier circuits are constructed and their measured performance compared to that predicted by design.
- (c) Sallen and Key filters are constructed and their measured performance compared to design predictions in terms of bandwidth, gain and Q-factor.
- (d) Wein bridge and phase-shift (RC ladder) oscillator circuits are constructed and their measured performance is compared to design predictions in terms of frequency of operation and the gain of the amplifier.
- (e) The performance of operational amplifier circuits is predicted by software simulation.

3) Investigate applications of analogue integrated circuits

- (a) The investigation of the use of two specialised analogue integrated circuits in practical applications is accurate and complete in terms of the given specifications.
- (b) Design calculations for the two specialised analogue integrated circuits are correct with respect to given parameters and data sheet formulae.
- (c) Construction and testing of a simple system based on each of the analogue integrated circuits is complete and correct in terms of the given specification.
- (d) Calculations involving power gain in a cascaded system are correct in terms of absolute and relative logarithmic power levels.

Assessment Matrix – The matrix indicates which instruments of assessment, within the primary assessment package, are required to satisfy individual performance criteria.

The column titled **Merit** identifies where particular opportunities exist for candidates to develop their work with a view to satisfying the requirements for the award of merit.

The row titled **Minimum Evidence Requirement** indicates the minimum number of examples required (or times a task must be performed) to satisfy a particular performance criterion.

*Indicates where the performance criteria must be satisfied over a range and opportunities exist throughout the indicated assessment material.

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OUTCOMES/PERFORMANCE CRITERIA		Qu	1a	1b	1c	2a	2b	2c	2d	2e	3a	3b	3c	3d	4a	4b	4c	Merit
TMA - 1 (v2)	1				F	O	R	M	A	T	I	V	E					
	2				X													
	3												X					
TMA - 2 (v2)	1				X	X												
	2		X		X													
	3		X		X	X												
	4		X		X	X												
TMA - 3 (v2)	1			X														
	2			X														
	3			X														
EVIDENCE	TMA - 4 (v2)	1									X	X						
		2									X							
		3						X										
		4														X		
		5													X			
		6															X	
		7														X		
		8												X	X			
EXPERIMENTS		1					X											
		2					X											
		3					X											
		4							X									
		5							X									
		6									X	X	X					
		7									X	X	X					
		8								X								
MERIT ASSIGNMENT (v2)		1																X
		2																X
MINIMUM EVIDENCE REQUIREMENT			3	3	2	5	4	2	1	1	4	3	2	1	2	3	1	2

Merit Statement

To gain a pass in this unit, a candidate must meet the standards set out in the outcomes, performance criteria, range statements and evidence requirements.

To achieve a merit in this unit, a candidate must demonstrate a superior or more sophisticated level of performance. In this unit this might be shown in the following ways:

- (a) Demonstrating an ability to use a number of different performance criteria in an integrative way (e.g. to solve problems that are more complex than are necessary to demonstrate the achievement of the individual performance criteria).
- (b) Using the individual performance criteria in a creative way to solve unfamiliar problems (i.e. is able to transfer a competence gained in one situation to a related but unfamiliar situation).
- (c) Demonstrating a critical awareness of the significance of the practical exercise to the theory and development of the subject.