



Unit Assessment Record (UAR)

Plant Services

(D3R5 04)

Credit Value: 1.5

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:	
<u>AUTHENTICATION OF EVIDENCE – INTERVIEW</u>		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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.....			
<u>GRADE</u>			
	REFER	PASS	MERIT
FINAL GRADE:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Please initial as appropriate			
ASSESSOR:		DATE:	

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VERIFIER:..... DATE:

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) Analyse steam systems using thermodynamic principles

TMA Evidence

Supplementary Evidence & Location

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| (a) Extraction of thermodynamic property information from sources of data is sufficient to enable the determination of steam conditions. |
| (b) Distinction between isenthalpic and isentropic processes is accurate as they occur in steam systems. |
| (c) Calculations of steam and condensate conditions include sufficient steps to indicate a logical progression and are accurate for a given set of data. |

2) Evaluate the use of steam as a heating medium

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| (a) Calculations involving the heat given out when steam condenses are accurate for a given set of data. |
| (b) Calculations involving relationships between steam pressure, temperature difference and heat transfer area are accurate for a given set of data. |
| (c) Description of the effect of air in a heating system is correct in terms of the loss of temperature difference. |

3) Apply thermodynamic principles to the Rankine cycle used in steam power plant

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| (a) Description of the components required in a steam power plant is correct according to their name, function and sequential order. |
| (b) Determination of the thermodynamic efficiency of the Rankine cycle is logical and accurate for given data. |
| (c) Determination of the work capability and the steam outlet conditions from a steam turbine are accurate for a given inlet steam condition. |

4) Describe the equipment used in the production and distribution of steam

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| (a) Distinction between the two main types of steam generator used in steam production is correct according to their construction, operation and uses. |
| (b) Description of the components making up a typical steam production and distribution system are correct according to their name, general construction and function. |
| (c) Representation of the order of components in a steam production and distribution system is correct on a flow diagram. |

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.

Plant Services

OUTCOMES/PERFORMANCE CRITERIA		Qu	1a	1b	1c	2a	2b	2c	3a	3b	3c	4a	4b	4c	5a	5b	5c	6a	6b	6c	Merit		
EVIDENCE	TMA - 1 (v2)	1		X																			
		2	X																				
		3	X	X	X																		
		4	X	X	X																		
		5	X																				
		6							X														
		7							X														
		8					X	X															
		9					X	X															
		TMA - 2 (v2)	1							X													
			2							X													
			3								X												
			4								X												
		TMA - 3 (v2)	1										X										
			2							X				X									
			3							X					X								
			4													X							
			5														X						
		TMA - 4 (v2)	1											X									
			2														X						
			3																X	X			
			4																		X		
			5																				
			6																				
	MERIT ASSIGNMENT (v2)	1				X	X															X	
		2													X	X	X					X	
		3							X	X	X	X	X	X								X	
	MINIMUM EVIDENCE REQUIREMENT		3	3	2	2	2	2	2	2	2	1	1	2	1	1	1	1	1	1	1	3	

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 by a systematic approach to the solution of problems of a more complex nature involving, for example, the extraction and interpretation of information from both standard reference sources and actual plant equipment.