



Unit Assessment Record (UAR)

Transfer Processes (D3RE 04)

Credit Value: 2

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

FOR COLU USE ONLY

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) Predict flow patterns of fluids flowing in pipelines

TMA Evidence

Supplementary Evidence & Location

(a)	Explanation of the factors affecting the flow of a fluid in a pipeline is correct in relation to the physical properties and characteristics of the fluid.
(b)	Description of flow is correct in terms of lamina, transitional and turbulent flow pattern.
(c)	Explanation of the factors affecting the flow patterns of fluids in pipes is correct in terms of pipe diameter and density, viscosity and velocity of fluid.
(d)	Solutions to problems relating to prediction of flow patterns using Reynolds number are accurate for a given set of conditions.

2) Evaluate energy losses in fluids flowing along pipelines

(a)	Explanation of the terms in the Bernouli equation is correct in terms of the Law of Conservation of Energy.
(b)	Calculation of pipe friction factor is correct for a given set of conditions.
(c)	Calculation of energy losses due to pipe friction, bends and pipe fittings is correct for a given set of conditions.

3) Evaluate the energy requirements for the pumping and transportation of fluids

(a)	Statement of formulae for the calculation of power and energy requirements is appropriate for a given situation.
(b)	Description of energy losses within a pumping system is correct for a given set of conditions.
(c)	Solution of problems relating to energy requirements for pumping are accurate for a given set of conditions.

4) Appraise the design and performance of pumping equipment

(a)	Description and comparison of pump operational characteristics is appropriate to their application.
(b)	Selection of a pump is appropriate for a given application in terms of its performance characteristics.

5) Evaluate the transfer of heat by conduction

(a)	Solutions to problems relating to steady-state heat transfer by conduction through single plane and composite plane walls are accurate for given conditions.
(b)	Solutions to problems relating to heat transfer by conduction through single pipe and composite pipe walls are accurate for given conditions.

6) Evaluate the transfer of heat by convection

(a)	Explanation of the factors affecting the rate of heat transfer by natural and forced convection is correct in terms of the physical properties of the fluid concerned.
(b)	Explanation of the effect of turbulence on the rate of heat transfer by natural and forced convection is correct.
(c)	Solutions to problems relating to heat transfer by natural and forced convection for fluid flow in pipes are accurate for a given set of conditions.

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.

Transfer Processes

OUTCOMES/PERFORMANCE CRITERIA	Qu	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c	4a	4b	5a	5b	6a	6b	6c	7a	7b	7c	8a	8b	8c	8d	9a	9b	9c	Merit
TMA - 1/2 (v2)	1								F	O	R	M	A	T	I	V	E												
	2	X																											
	3	X	X	X	X																								
TMA - 2/3 (v2)	1					X																							
	2					X																							
	3								F	O	R	M	A	T	I	V	E												
	4					X																							
	5					X	X		X	X																			
	6					X	X		X	X																			
TMA - 4 (v2)	1								X	X	X																		
	2								X	X	X																		
	3											X																	
TMA - 5 (v2)	1												X																
	2												X																
	3											X	X																
	4											X																	
	5											X	X																
	6											X	X																
TMA - 7 (v2)	1													X															
	2													X															
	3														X														
	4														X														
TMA - 8/9 (v2)	1														X	X	X												
	2															X													
	3																		X	X	X								
	4																	X											
	5																			X									
TMA - 10 (v2)	1																					X		X					
	2																								X				
	3																								X				
	4																						X	X					
TMA - 11 (v2)	1																										X		
	2																									X	X		
	3								F	O	R	M	A	T	I	V	E												
	4																										X		
MERIT ASSIGNMENT (v2)	1			X		X	X		X																				X
	2					X			X																				X
	3														X														X
	4																X												X
	5																							X					X
MINIMUM EVIDENCE REQUIREMENT		2	1	1	1	3	2	2	2	3	3	3	3	2	2	1	1	3	1	1	2	2	1	2	1	2	1	1	4

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 extracted from standard reference sources.