

Access to H.E. National Programme Unit



Unit Title:	Chemical and Acid-Base Equilibria		
Graded Unit Code:	GA33CHE11	Ungraded Unit Code:	UA33CHE11
Pathway(s):	Science and Engineering		
Module(s):	Chemistry		
Level:	3	Credit Value:	3
Valid from:	1 st August 2019	Valid to:	31 st July 2028

The following QAA grade descriptors must be applied if you are delivering the graded version of this unit:

1	Understanding of the subject
3	Application of skills
7	Quality

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Know that many reactions are reversible and recognise that the equilibrium constant can be calculated	1.1 Use Le Chatelier's principle to predict the effects on position of equilibrium due to changes in temperature, pressure, concentration and addition of a catalyst
	1.2 Predict the effect of temperature on the position of equilibrium and explain why a compromise temperature and pressure may be used in industrial processes
	1.3 Construct an expression for K_c and perform calculations for a homogeneous system at constant temperature
	1.4 Predict and explain the effects of changes in temperature, concentration or the addition of a catalyst on the value of the K_c of a range of given reactions
2. Know that acids and bases react in different ways	2.1 Define acids and base in terms of proton transfer

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LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
	2.2 Define pH and calculate the pH of strong acids from its concentration or vice versa
	2.3 Describe the dissociation of weak acids and bases in aqueous solution
	2.4 Define K_a and pK_a
	2.5 Calculate the pH of weak acids, and explain the assumptions made in such calculations
3. Recognise that the dissociation of water is an example of homogeneous equilibrium	3.1 Define K_w and calculate the pH of a strong base
	3.2 Explain the variation of K_w with temperature
4. Understand the nature and action of buffer solutions	4.1 Describe the components of an acidic buffer and of a basic buffer
	4.2 Qualitatively explain the action of acidic and basic buffers using specific examples from living or non-living systems