Equilibrium

Summary of material in FIRST YEAR lectures
(skeleton notes)

You must put 'flesh' on these 'bare bones'
(...**not everything is covered**)

equilibrium

For reactions: $aA + bB \rightleftharpoons xX + yY$

Reaction quotients: $Q = [X]^x[Y]^y/[A]^a[B]^b$
(*pure liquids/solids do not affect an equilibrium* and are omitted)

$Q = K$ system is at **equilibrium** (K is the equilibrium constant)
$Q < K$ reaction to produce **more products**
$Q > K$ reaction to produce **more reactants**

Equilibrium constants (K):
Reverse a reaction: new $K' = 1/K$
Multiply a reaction **by "n"**: new $K'' = K^n$

Relationship between K_c and K_p:
$K_p = K_c (RT/p^\circ)^{\Delta n^{gas}}$

If there is **no temperature change, then K is CONSTANT**.

equilibrium problems

General method for solving equilibrium problems...

1. balance the reaction equation

2. concentration table
   - write initial concentrations (or partial pressures)
   - write changes required to reach equilibrium concentrations
     (if unknown, choose one change as x; express others in terms of x; increases in concentration are positive, decreases are negative)
   - write equilibrium concentrations
     (= initial concentrations + changes)

3. substitute equilibrium concentrations into the equilibrium constant expression

4. solve unknown quantity

5. answer the question !!

How should I study for this topic?

THINK CRITICALLY!!

Ask yourself: Do I understand everything presented? Can I do all the problems... from lectures, worksheets & tutes?

Try to understand the material...
(use the syllabus & lectures as a guide)

repeat till you understand it all!!

Attend lectures, do worksheets...

Read lecture notes & textbook ...

Do some more problems ...
(from tutorials, textbook & sample exams)

Do some more problems ...