

Managing your University learning experience

Talk 2



**Getting the most
out of a lecture**



We explore



Natural challenges



Benefits of attending a lecture



Being 'present' mentally



Six ways to get the most learning
from lectures

Natural challenges

- Lecturers speak faster than you can write
- Your working memory cannot cope with the rate of information flow to remember everything that is said by the lecturer, let alone write it all down
- Some lecturers are better at lecturing than others



Natural challenges

- You have to listen, comprehend, observe multimedia slides, write notes and maintain concentration for a long period while the lecturer keeps moving on to new material all the time !!
- It is hard for anyone to maintain concentration beyond 20 minutes unless they develop a skilled technique



Benefits of attending a lecture

A good experience at a lecture affects us in emotional ways:

- Inspiration to more fully understand a topic
- Increased self-motivation to study
- Contagious enthusiasm for insight into a subject that at first you thought might be boring
- Shared experience in the joy of learning

Benefits of attending a lecture

Long after you graduate from this programme you will remember the best lecturers, not the best set of notes or slides online

Lectures and the Virtual Learning Environment are mutually supportive, not mutually exclusive

Being 'present' mentally

Remember the rule of 'Active Learning': question, question, question!

Continually compose relevant questions in your mind during the lecture

Ask relevant questions of the lecturer if anything is not clear

Six ways to get the most learning from lectures

1 Standardise your pre-lecture routine

Pre-lecture routine

- Warm-up routine:
take your seat a few minutes before the lecture starts,
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- Warm-up routine:
 - take your seat a few minutes before the lecture starts,
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- If lecture slides are available in advance, take a quick look through them – this will help prepare your mind for what is coming next, leading to better connections with your existing knowledge

Pre-lecture routine

Use the 'active learner' habit of framing some relevant **questions** in your mind that you expect to find answers to by the end of the lecture

2 Structure the flow of information in your mind

Structure the information flow

- Organise the way you structure lecture information in your mind, by listening very carefully to the opening remarks and to the summary
- By structuring the new information, you connect it more effectively to information already in your memory

Structure the information flow

Beginning of lecture: be there and be ready to structure the parts of the lecture in your mind based on the opening remarks

(example “We will examine three major factors”)

End of lecture: Reinforce (or readjust) the structure of the information in your mind by carefully listening to the lecturer’s closing summary

*(and be careful not to automatically stop listening if there are
no new slides on the screen !)*

3 Identify & Categorise the importance of information

Identify the importance of information

Identify the relative importance of information by looking out for verbal signposts from the lecturer

(emphasis, slower speed of speech, repetition, key phrases etc.)

Categorise the importance of information

- Use three 'know' classifications to categorise the information in your note-taking:

Very important (*Must know this to pass the module*)

Important (*Should know this to get a high grade*)

Incidental (*Could know this, but it is information that the lecturer is only presenting to help your overall understanding of the 'must know' material and to keep up your interest during the lecture*)

4 Effective note taking

Effective note taking

- Take hand written notes, not by typing on a laptop

Students using laptops are inclined to just type without thought

Students writing by hand are more selective in content, which triggers processing of the material in their mind, aiding their understanding

Effective note taking

- Listen, comprehend and write down your understanding of what the lecturer is trying their best to get across
- You can check the validity of your understanding during your study session later

Effective note taking

- Be selective in what you write down.
- Identify what is: very important ('must know'),
important ('should know')
of incidental value ('could know')
- Make sure to write down all of the 'must know'
- Write as much of the 'should know' as you can
- Only write down the 'could know' if it helps your understanding

Example of

Very Important
(‘must know’)

Important (‘should
know’)

Incidental
(‘could know’)

- The Binary Number System is used in computers to manipulate and store all of their data.
- The only symbols used are 1 and 0.
- The system has a base of 2.
- For example, 1101.11 in binary system is 13.75 in decimal.

Given that:

$$\begin{array}{cccccc} 2^3 & 2^2 & 2^1 & 2^0 & 2^{-1} & 2^{-2} \\ 8 & 4 & 2 & 1 & \frac{1}{2} & \frac{1}{4} \end{array}$$

We find that

$$\begin{array}{ccccccc} 1 & 1 & 0 & 1 & . & 1 & 1 & = 1101.11 \\ 8 & 4 & 0 & 1 & . & 0.5 & 0.25 & = 13.75 \end{array}$$

- Subscripts are used to indicate the bases of the systems
- For example, $1101.11_2 = 13.75_{10}$

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- During a lecture the mind naturally wanders to our feelings and inner thoughts rather than just being focussed on the lecture content
- Bring your thoughts back to the lecture content by the 'active learner' habit of being an information seeker rather than the information taker

Questioning, to help keep up your concentration

- Think along with the lecturer, anticipating where you think the lecture material is going
*(for example, during the derivation of a formula
or solution to a theoretical problem)*
- Thus keep refocusing your attention on the lecture by posing relevant questions in your mind of what the next slide might show

Example:

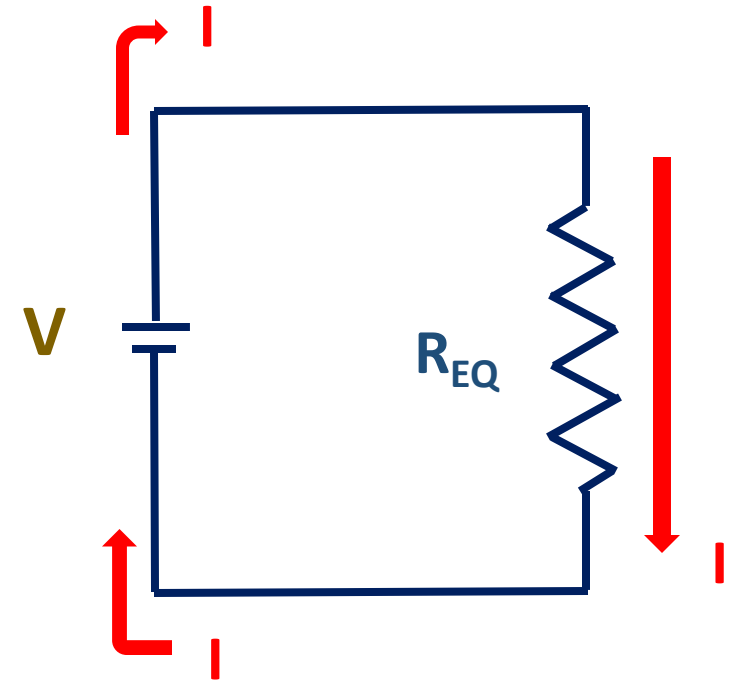
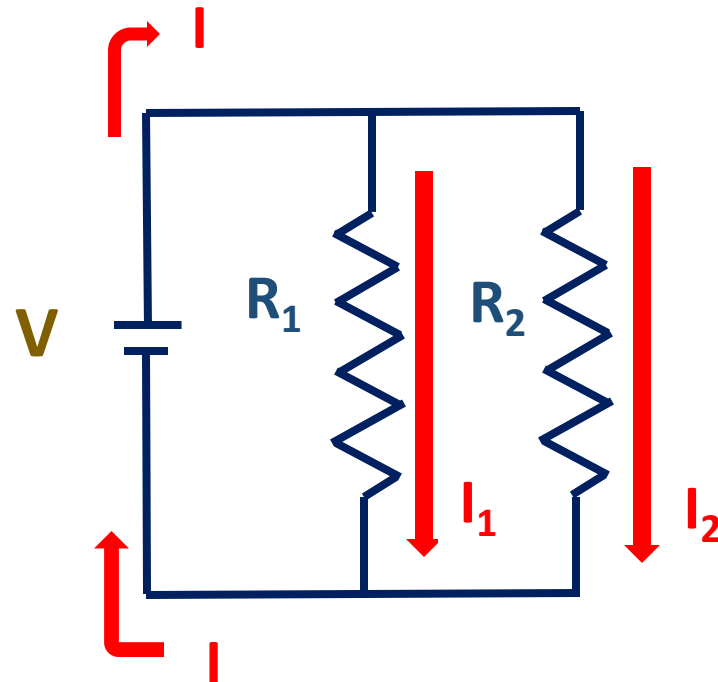
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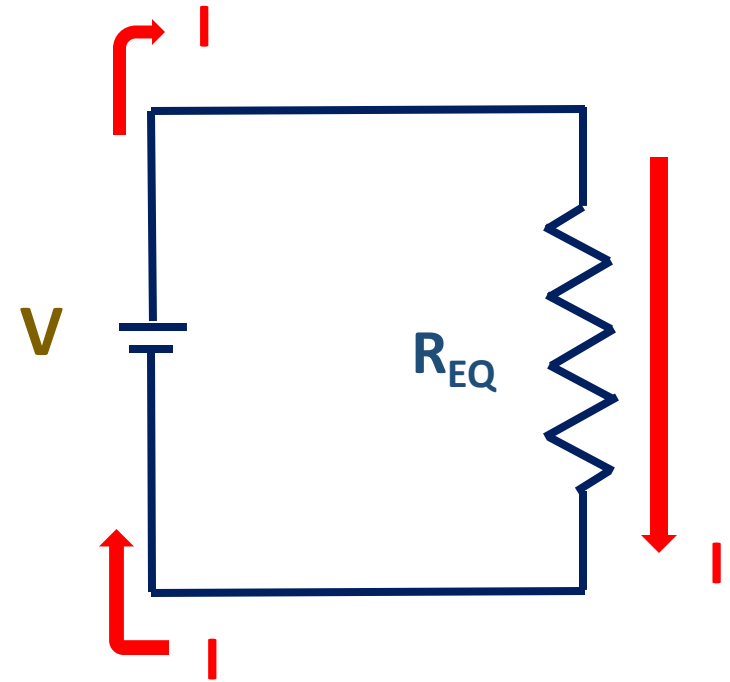
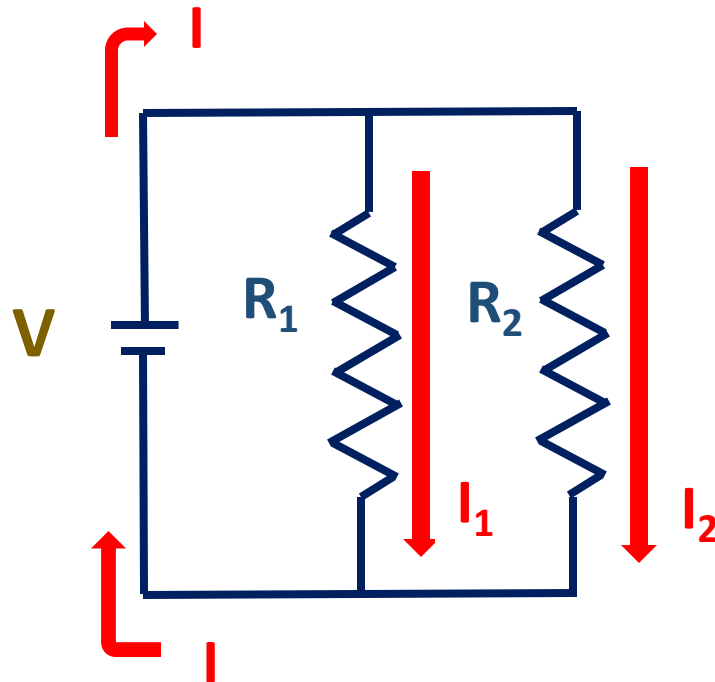


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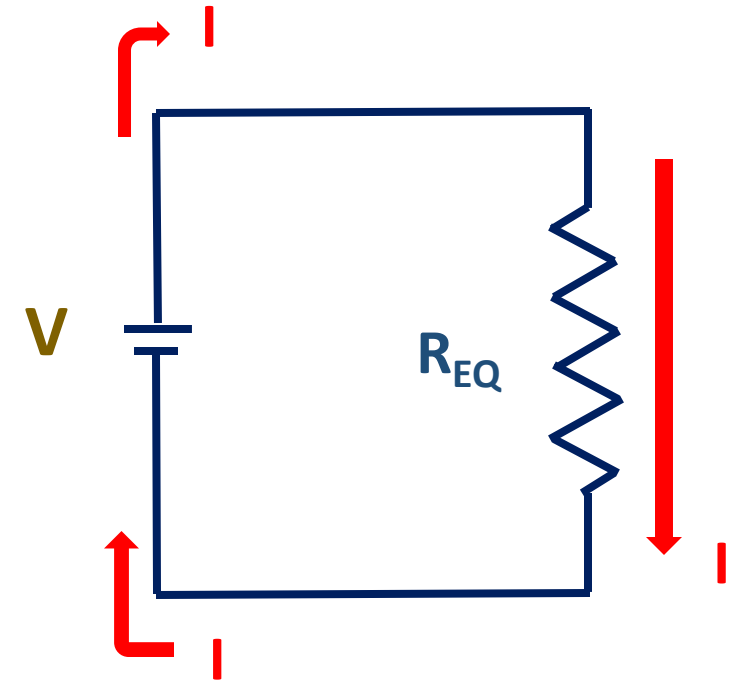
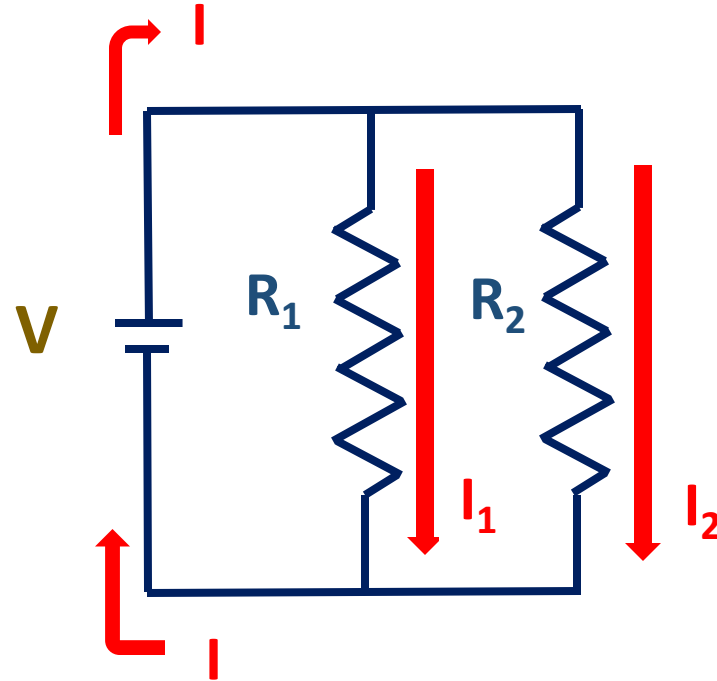
Can you express R_{EQ} in terms of R_1 and R_2 ?



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Example:

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Given that $i = i_1 + i_2$

and $i = \frac{V}{R_{EQ}}$ $i_1 = \frac{V}{R_1}$ $i_2 = \frac{V}{R_2}$

Example:

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i =

Example:

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i = Think ahead! What would you put here?

Example:

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$$i = i_1 + i_2$$

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$$i = i_1 + i_2 =$$

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$$i = i_1 + i_2 = \text{Think ahead!}$$

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$$i = i_1 + i_2 = \frac{V}{R_{EQ}}$$
$$\frac{V}{R_{EQ}} = \frac{V}{R_1} + \frac{V}{R_2}$$

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$$\frac{1}{R_{EQ}} = \frac{1}{R_1} + \frac{1}{R_2}$$

$$R_{EQ} = \frac{R_1 R_2}{R_1 + R_2}$$

6 Follow-up review of new lecture notes

Follow-up review

Successful learning requires thinking about the material many times before you fully grasp it

Concept

Theory

Assumptions

Modelling formulae

Application examples

etc.

Follow-up review

- Studying material regularly and briefly improves comprehension and memory retention
- Research shows that students who review their lecture notes for 15 minutes later on the day of that lecture greatly enhance their learning

Follow-up review

- Skim through your notes and mark up points that need clarification
- Turn points that need clarification or elaboration into **questions** that you will research later
- Write a quick summary of the key points at the end of your notes

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