The New Distance Learning Course

Objectives

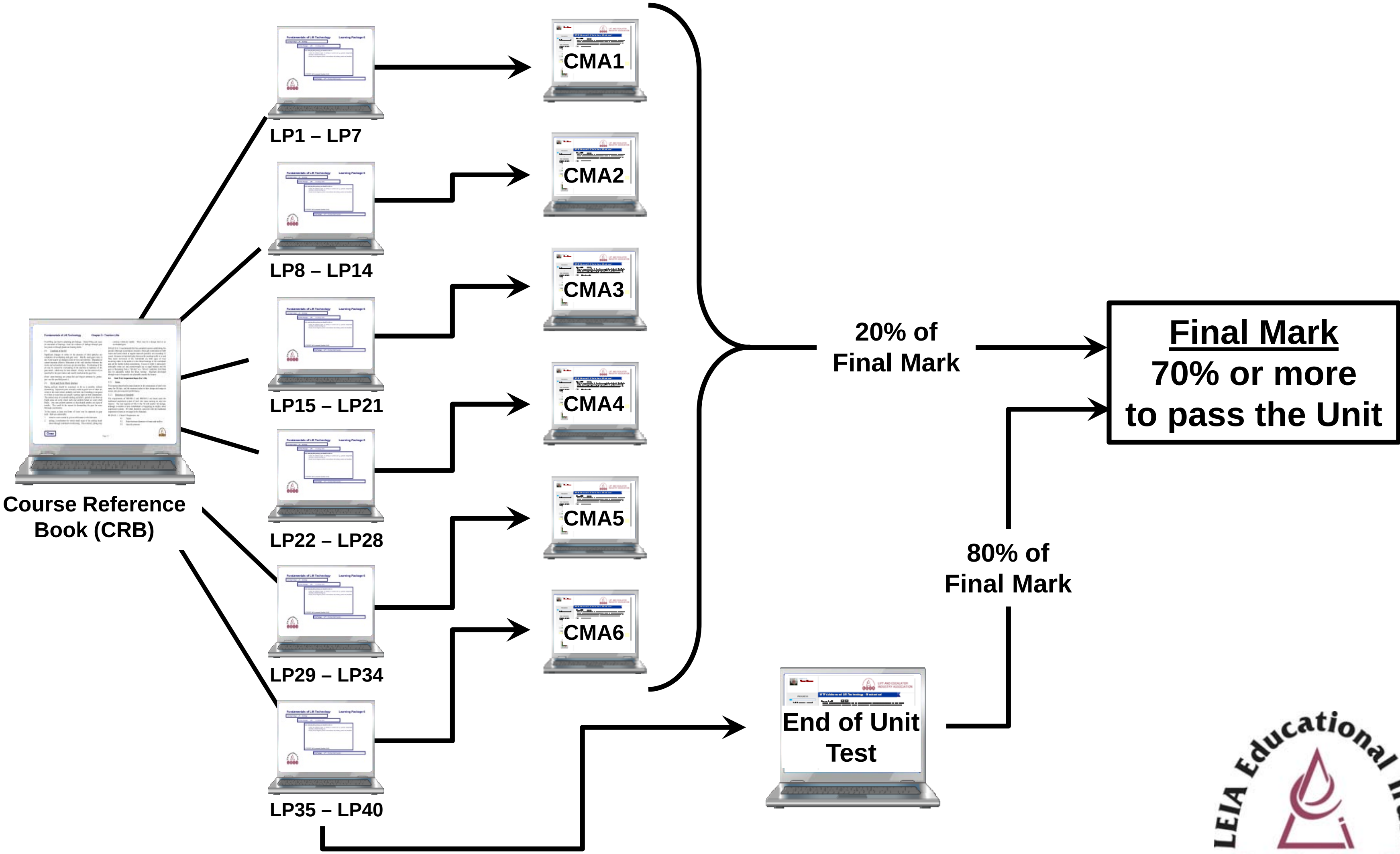
The Objectives of this slide show are :-

1. To explain how the course works

2. To give guidance for successful study

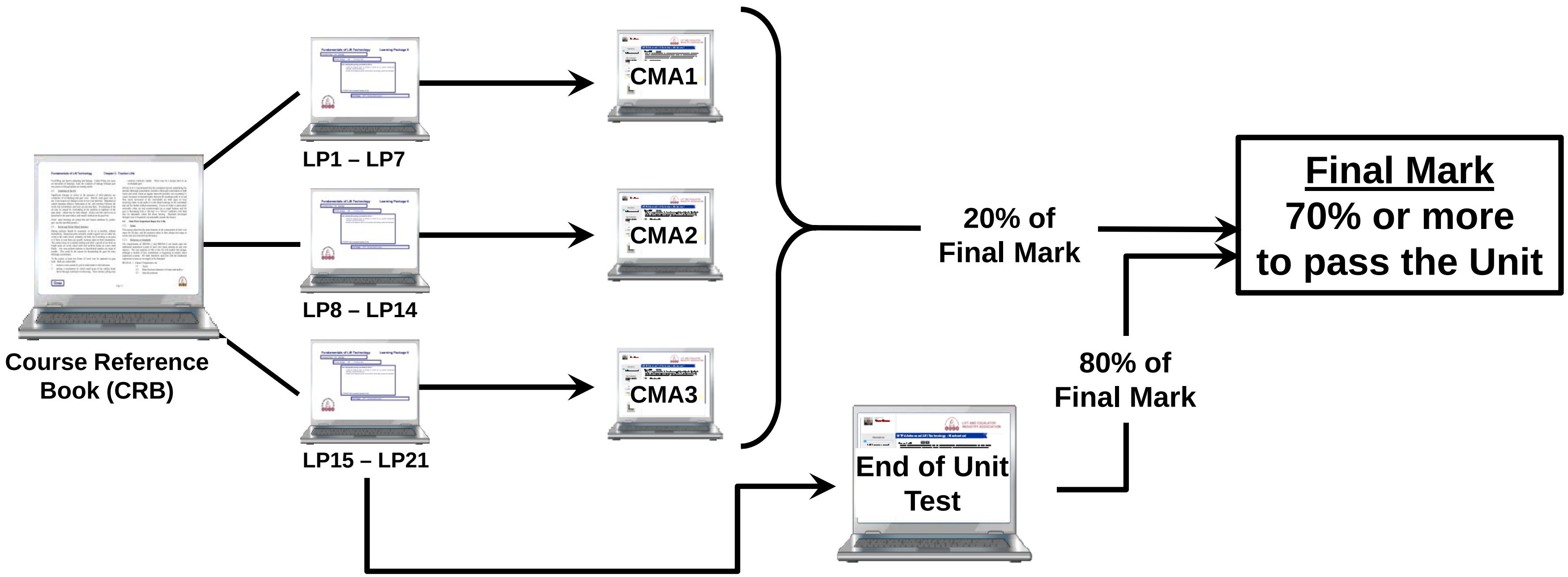
3. To give some hints on how to avoid pitfalls

Structure of the Study Programme



The New LEIA Distance Learning Course

Structure of the Study Programme
(Half Units)



LEIA

The Lift and Escalator Industry Association

Study Timetable - Full Units September 2013

Study Week	Week Ending Friday	Learning Packages to be Studied	Other Activity
1	06/09/2013		
2	13/09/2013		
3	20/09/2013	LP1 - LP7	
4	27/09/2013		
5	04/10/2013		CMA1 accessible
6	11/10/2013		Complete Assignment CMA1
7	18/10/2013	LP8 - LP14	CMA1 grace period max 50%
8	25/10/2013		CMA1 grace period max 40%
9	01/11/2013		CMA2 accessible
10	08/11/2013		Complete Assignment CMA2
11	15/11/2013		CMA2 grace period max 50%
12	22/11/2013	LP15 - LP21	CMA2 grace period max 40%
13	29/11/2013		
14	06/12/2013		CMA3 accessible
15	13/12/2013		Complete Assignment CMA3
16	20/12/2013		CMA3 grace period max 50%
17	27/12/2013	LP22 - LP28	End of Semester 1 CMA3 grace period max 40%
18	03/01/2014		
19	10/01/2014		Receive Semester 1 Progress Report/ CMA4 acc'bl'
20	17/01/2014		Complete Assignment CMA4
21	24/01/2014		CMA4 grace period max 50%
22	31/01/2014	LP29 - LP34	CMA4 grace period max 40%
23	07/02/2014		
24	14/02/2014		CMA5 accessible
25	21/02/2014		Complete Assignment CMA5
26	28/02/2014	LP35 - LP40	CMA5 grace period max 50%
27	07/03/2014		CMA5 grace period max 40%
28	14/03/2014		CMA6 accessible
29	21/03/2014		Complete Assignment CMA6
30	28/03/2014		CMA6 grace period max 50%
31	04/04/2014		CMA6 grace period max 40%
32	11/04/2014	Preparation for	
33	18/04/2014	End Test	
34	25/04/2014		End of Semester 2
35	02/05/2014		
36	09/05/2014		End Test Thurs 08/05/14

1309 Full Units v4

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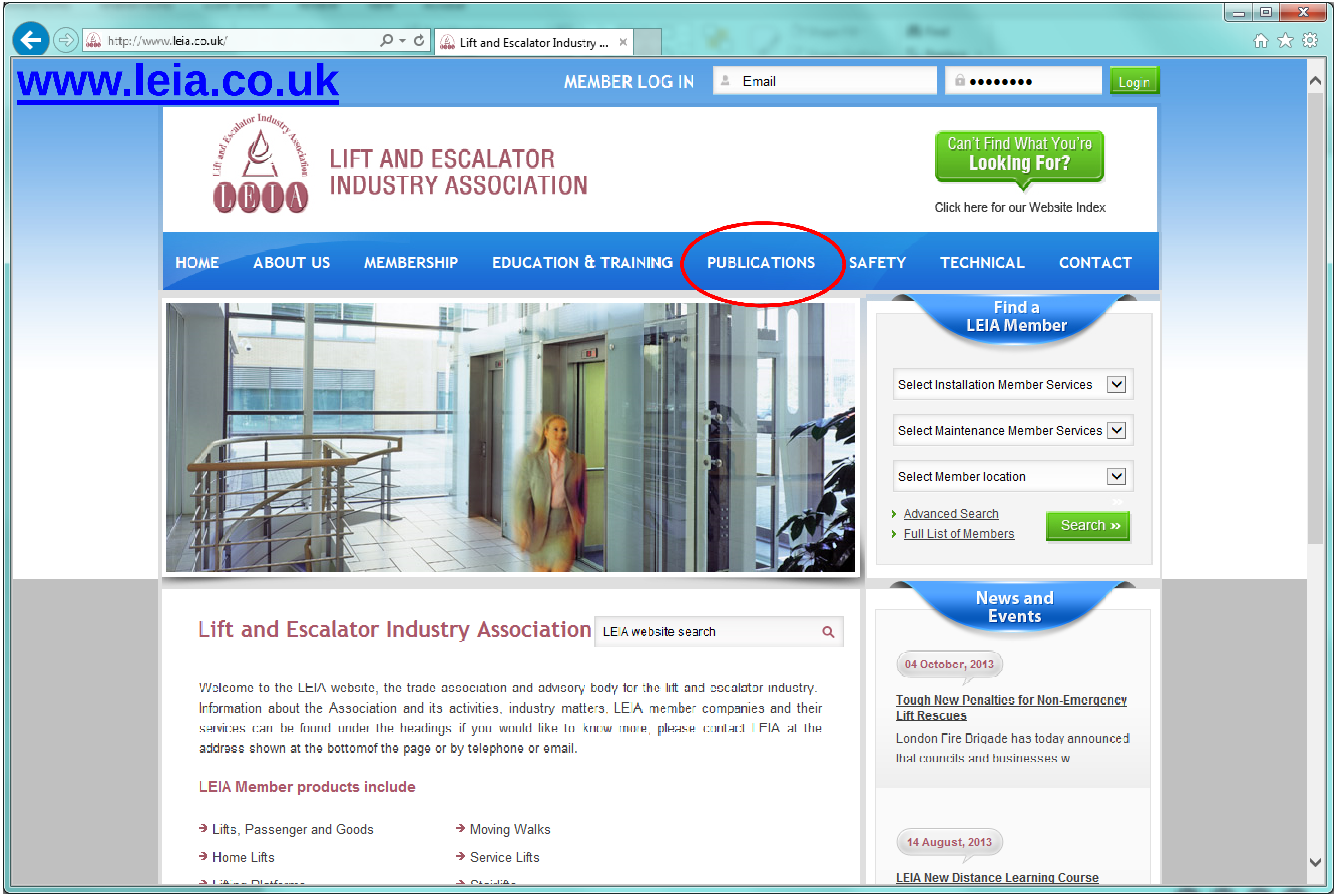
Sample Timetable

The New LEIA Distance Learning Course



The New LEIA Distance Learning Course

The Learning Materials

Introduction to Lift Technology

Learning Package 9

Learning Package : **LP9**

General Objective : Construction, uses, limitations and handling methods of suspension and ancillary ropes for lift installations.

Previous Package : **LP8** Principles of sheave construction and grooving

After studying this package you should be able to :

Sketch, describe and compare the various constructions of ropes used in the lift industry.

State the materials used and reasons for using a core.

ATTEMPT Self Assessment Question (SAQ)

Next Package : **LP 10** Suspension and ancillary ropes for lifts.

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Here's the title page for a typical Learning Package

It provides important information for your learning, as we'll see

Learning Package : **LP9**

General Objective : Construction, uses, limitations and handling methods of suspension and ancillary ropes for lift installations.

Previous Package : **LP8** Principles of sheave con... ...nd grooving

After studying this package you shoul...

Sketch, describe and compare the ...

State the materials used and reas...

ATTEMPT Self Assessment Question (SAQ)

This is what the Learning Package is about

Next Package : **LP10** Suspension and ancillary ropes for lifts.

Learning Package : **LP9**

General Objective : Construction, uses, limitations and handling methods of suspension and ancillary ropes for lift installations.

Previous Package : **LP8** Principles of sheave construction and grooving

After studying this package you should be able t

Sketch, describe and compare the v

State the materials used and reas

ATTEMPT Self Assessment Question (SAQ)

This is what the last Learning Package was about

Next Package : **LP10** Suspension and ancillary ropes for lifts.

Learning Package : **LP9**

General Objective : Construction, uses, limitations and handling methods of suspension and ancillary ropes for lift installations.

Previous Package : **LP8** Principles of sheave construction and grooving

After studying this package you should be able to :

Sketch, describe and compare the various constructions of ropes used in the lift industry.

State the materials used and reasons for using a core.

ion (SAQ)

Next Package : **LP10** Suspension and ancillary ropes for lifts.

This is really important!
It tells you not simply what you should learn from the LP, but what you should **be able to do** after you've studied it.

Learning Package : **LP9**

General Objective : Construction, uses, limitations and handling methods of suspension and ancillary ropes for lift installations.

Previous Package : **LP8** Principles of sheave construction and grooving

After studying this package you should be able to :

Sketch, describe and compare the various constructions of ropes used in the lift industry.

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on (SAQ)

Next Package : **LP10** Suspension and ancillary ropes for lifts.

If you take the trouble to do the activities listed here after studying each learning package, you'll get a first rate command of the learning outcomes of the unit.

Learning Package : **LP9**

General Objective : Construction, uses, limitations and handling methods of suspension and ancillary ropes for lift installations.

Previous Package : **LP8** Principles of sheave construction and grooving

After studying this package you should be able to :

Sketch, describe and compare the various constructions of ropes used in the lift industry.

State the materials used and reasons for using a core.

ATTEMPT Self Assessment Question (SAQ)

Next Package : **LP10** Suspension and ancillary ropes for lifts.

LEIA Education

The self assessment question will also help you to check your achievement of the learning outcomes

Learning Package : **LP9**

General Objective : Construction, uses, limitations and handling methods of suspension and ancillary ropes for lift installations.

Previous Package : LP8 Principles of sheave construction and grooving

After studying this package you should be able to :

Sketch, describe and compare the various constructions of ropes used in the lift industry.

State the materials used and reasons for using a core.

ATTEMPT Self Assessment Question (SAQ)

Next Package : LP10 Suspension and ancillary ropes for lifts.

Finally, this box tells you what the next LP is about, so you can see whether you're coming to a new topic.

thus prevent damage being caused to adjacent wires or persons handling the rope.

Now read Course Reference Book, Section 3.5.8.3.

Note particularly the so-called 'dual-tensile' construction, i.e. inner layers of high tensile strength wires and outer layers of the lower tensile strength wires making up the rope strand.

Materials used and reasons for using a core

All lifting ropes have a core which is referred to as a fibre core. The materials used may be natural fibre or man-made fibre, and typical examples in common use are:

SISAL

A natural fibre obtained from kinds of plant called agave. The fibre is white, strong and durable.

POLYPROPYLENE

A man-made fibre which is strong, resistant to chemicals and solvents, and can be bent repeatedly without cracking.

In either case, the fibre core is impregnated with a special lubricant and acts as a reservoir to lubricate the wires of the rope from within. This lubrication from the fibre core reduces friction between wires, helps maintain rope flexibility, and preserves the rope and core from the deteriorative effects of dampness.

Ropes - Factor of Safety

In the interests of safety and the achievement of satisfactory rope life, British Standards specify safety factors to restrict not only the loads carried by suspension ropes, but also to take into account their duty (i.e. the type of conditions under which they are used). Now read of Course Reference Book Section 3.5.8.2.

BSEN81-1 Annex N specifies a method for calculating the required factor ... ion sheave ... We have a ... eys in a pr ... r is related ... ion rope. ... his course, ... safety factors as:

Now here's a typical page in the Learning Package

"The safety factor of the suspension ropes shall be at least:

(a) 12 in the case of traction drive with 3 ropes or more;

(b) 16 in the case of traction drive with 2 ropes."

This means that if the safety factor calculated according to Annex N is below these values, then the minimum value will apply. If the calculated safety factor is greater than these values, then this is the one that must be used.

The actual safety factor for a suspension rope is the ratio of the minimum breaking load (in ***Newtons***) of one rope and the maximum tension (in ***Newtons***) in this rope when the lift car is stationary at the lowest level, with its full rated load.

$$\text{Factor of Safety} = \frac{\text{minimum breaking load of one rope (Newtons)}}{\text{maximum tension in the rope (Newtons)}}$$

The minimum breaking load of the rope is usually determined in practice by the rope manufacturer, who 'pulls' the rope until it breaks, and records the load at which it broke. This value, along with other data about the rope is reported to the lift maker or installer on a rope test certificate supplied with the rope.

The New LEIA Distance Learning Course

thus prevent damage being caused to adjacent wires or persons handling the rope.

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Ropes - Factor of Safety

In the interests of safety and the achievemen British Standards specify safety factors to restrict not only the loads carried by suspension ropes, but also to take into account their duty (i.e. the type of conditions under which they are used). Now read of Course Reference Book Section 3.5.8.2.

Here the LP is referring you to a section in the Course Reference Book.

Click on the link and you'll go straight to Section 3.5.8.3

BSEN81-1 Annex N specifies a method for calculating the required factor of safety, which depends on both the groove shape in the traction sheave, and the number of pulleys that the rope has to go round. We have already seen that lift systems can have multiple 'diverter' pulleys in a previous Learning Package. The required value of safety factor is related both to safety and to ensuring the service life of the suspension rope. The actual details of the calculation are beyond the scope of this course, but it is worth noting that BS EN81-1 states the minimum safety factors as:

"The safety factor of the suspension ropes shall be at least:

(a) 12 in the case of traction drive with 3 ropes or more;

n drive with 2 ropes."

ed according to Annex N is value will apply. If the values, then this is the one

n rope is the ratio of the one rope and the maximum lift car is stationary at the

d of one rope (Newtons)

in the rope (Newtons)

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of the traction groove shape, i.e. by varying the angle of wrap (α) and the shape of the grooves in the traction sheave.

Whilst we must remember that in the case of a buffered counterweight, rope slip must be guaranteed, nevertheless, in the majority of practical c

So here's the beginning of Section 3.5.8.3.

This section of the CRB is meant to be read now as part of the Learning Package.

th

in clean conditions, the effect of the bending results i of abrasion and wear of the rope strands.

When we consider actual operating conditions, with a level of dirt dust, and the effect of passing over a traction sheave with undercut or vee grooves, the level of crushing, abrasion and wear is considerably increased.

It is clear that the less onerous is the rope duty, the less will be the effect of wear and crushing, and the longer will be the useful rope life. It is but a small step to realise that a less onerous duty for the suspension ropes is directly associated with an increased factor of safety. Although the relationship is not simple, experience has shown that with the materials used traditionally in the design of ropes and sheaves/pulleys (e.g. steel wire and cast iron), a suitably chosen safety factor will, given regular maintenance and inspection, result in an adequate useful life for the suspension ropes.

BS EN81-1: Annex N specifies the required method for calculating rope safety factor, subject to a minimum value (12 for traction drive with three or more ropes, and 16 where there are only two ropes). Although the detail of the calculation is beyond the scope of this book, ethod depends upon determining the number of pulleys with nds (N_{equiv}) which would be equivalent to the particular rope tion and traction sheave groove shape.

n sheave with undercut or vee groove is equivalent to number pulleys, as is a reverse bend, where the rope passes over one nding in one direction, and then, a short distance away, bends her direction on the next pulley. Thus, a reverse bend is by a factor of 4 in the calculation, whilst, as an example, a heave with round grooves, undercut to an angle of 80° is taken ivalent to 3 simple pulleys.

N gives both a calculation method and a graphical method for determining the required safety factor (subject to the minimum values of 12 and 16 noted above) based on the equivalent number of simple pulleys (N_{equiv}) together with the diameters of the traction sheave (D_t) nd suspension ropes (d_r).

3.5.8.3. Single and Dual-tensile Construction

Apart from the different forms of construction, e.g. 6/19 (9/9/1), the properties of the rope can be changed by using wire of different strength, the standard choice being wire having values of breaking strength 1570 N/mm^2 or 1770 N/mm^2.

1180 N/mm^2 and 1370 N/mm^2 are also used for a particular purpose, mentioned below.

At first sight it might be thought that the higher the better, but there is a practical problem in that the higher tensile strength wires are at the

Close

of the traction groove shape, i.e. by varying the angle of wrap (α) and the shape of the grooves in the traction sheave.

Whilst we must remember that in the case of a buffered counterweight, rope slip must be guaranteed, nevertheless, in the majority of practical cases, the problem is to achieve sufficient traction for normal drive and emergency braking.

Having achieved a design which satisfies the necessary traction criteria, we must turn our attention to the safety factor and service life of the suspension ropes.

When a rope passes over a plain round grooves with simple bend), the strands o addition to being somewha the tension in the ropes. Ev in clean conditions, the effe of abrasion and wear of the

When we consider actual o dust, and the effect of pass vee grooves, the level of crushing, abrasion increased.

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A traction sheave with undercut or vee groove is equivalent to number of simple pulleys, as is a reverse bend, where the rope passes over one ... away, bends ... rse bend is ... example, a ... 80° is taken

... method for ... mum values ... er of simple ... sheave (D_t)

On each page of the CRB there's a "CLOSE" button

Click on the close button on the page where you finish and you'll go back to the LP

3.5.8.3. Single and Dual-tensile Construction

Apart from the different forms of construction, e.g. 6/19 (9/9/1), the properties of the rope can be changed by using wire of different strength, the standard choice being wire having values of breaking strength 1570 N/mm^2 or 1770 N/mm^2.

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thus prevent damage being caused to adjacent wires or persons handling the rope.

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Ropes - Factor of Safety

In the interests of safety and the achievement of s rope life, British Standards specify safety factors to re only the loads carried by suspension ropes, but also to ta o account their duty (i.e. the type of conditions under which they are used). Now read of Course Reference Book Section 3.5.8.2.

Now the LP is referring you to another section in the Course Reference Book.

Click on the link and this time you'll go straight to Section 3.5.8.2

Notice that the LP is taking you through the CRB sections in an order appropriate to your learning, not in the order they appear in the CRB!

BSEN81-1 Annex N specifies a method for calculating the required factor of safety, which depends on both the groove shape in the traction sheave, and the number of pulleys that the rope has to go round. We
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pension
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The minimum breaking load of the rope is usually determined in practice by the rope manufacturer, who 'pulls' the rope until it breaks, and records the load at which it broke. This value, along with other data about the rope is reported to the lift maker or installer on a rope test certificate supplied with the rope.

down the well. (See Diagram D.3.18). The total wrap angle is thus

So now here's the beginning of Section 3.5.8.2.

Again, read this section of the CRB as part of the Learning Package.

From the viewpoint of the ropes and the lift machi... of the loaded car and the counterweight may be doubled... a complete new range of duties available. As an example, a ... rated at a duty of 600 kg. at 1 m/s in direct roping, may be used in 2... roping at 1200 kg. at 0.5 m/s, using the same driving motor. The factor 2 is referred to as the reeving ratio or roping ratio.

According to the dimensions of the car, one or two car-top multiplying pulleys may be required. They are normally placed so that the ropes are suspended on the line running between the guides, likewise for the pulley on top of the counterweight.

In the machine roomless configuration, where the lift machine is located in the well, usually at one side, 2:1 roping is employed both to reduce the suspended load on the lift machine and so that the suspension ropes can run down one side of the well and up the other.

This avoids the need for additional pulleys to lead the ropes to the centre of the well.

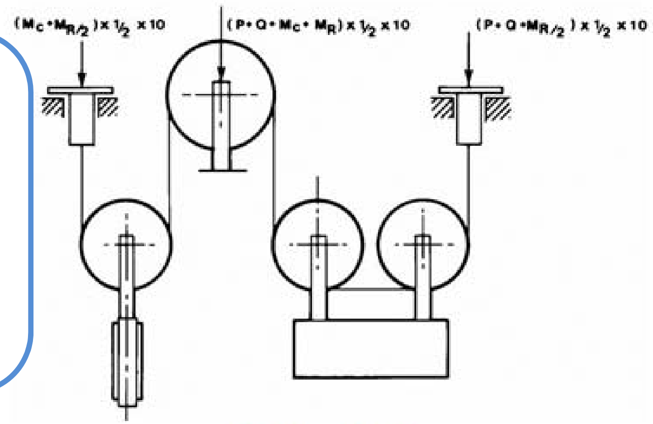

Diagram D.3. 19 :
Simple Configuration for Machine Above with Single Wrap, 2:1 Roping

3.5.8.2. Rope Factor of Safety

Satisfactory traction depends upon ensuring that the traction ratio under a number of different design conditions is within limits determined by certain critical values. The achievement of a satisfactory condition is an iterative process of manipulating two factors :-

i) Control of the designed traction ratio (T_1/T_2) by, for example, the application of rope or chain compensation (see section 3.5.7) to reduce the extent of the variation as the suspension ropes transfer from one side of the traction sheave to the other during lift travel.

ii) Matching of the critical traction ratio by modification of the geometry of the traction and diverter/secondary pulleys and

Close

Self Assessment Question

(a) Why and how is a steel wire suspension rope lubricated?

(b) Why does a rope have a safety factor, and what is the minimum value of safety factor to meet BS EN 81-1?

Click here for our solution

Next Learning Package

Finally, at the end of the Learning Package, you'll find the Self Assessment Question.

When you're confident of what you've learned, have a go at the self assessment question, and also, check your ability to complete the learning outcomes listed on the title page of the LP

Self Assessment Question

(a) Why and how is a steel wire suspension rope lubricated?

(b) Why does a rope have a safety factor, and what is the minimu[m] value of safety factor to meet BS EN 81-1?

When you're pretty sure that you've answered the SAQ, you can check if you got it right by clicking here and going to the solution we've prepared.

Of course, you could go straight to the solution without trying the question for yourself, but if you do, you're only kidding yourself that you've achieved the learning outcomes!

Click here for our solution

Next Learning Package

Self Assessment Question

(a) Why and how is a steel wire suspension rope lubricated?

(b) Why does a rope have a safety factor, and what is the minimum value of safety factor to meet BS EN 81-1?

Solution

(a) The suspension rope has a core to provide lubrication throughout the life of the rope. This lubrication from the fibre core reduces friction between wires, helps maintain rope flexibility, and preserves the rope and core from the deteriorative effects of dampness. The core is typically made from SISAL or POLYPROPYLENE.

(b) The suspension rope must have a safety factor in the interests of safety and the achievement of satisfactory rope life. The safety factor is determined by the duty of the rope, but BS EN 81-1 states the following minimum safety factor:

"The safety factor of the suspension ropes shall be at least:

(i) 12 in the case of traction drive with 3 ropes or more;

(ii) 16 in the case of traction drive with 2 ropes."

The actual safety factor for the rope is determined using the maximum force before the rope breaks (from the test certificate), and the actual load placed on the rope.

Here's the SAQ solution for you to check against your learning.

Return to Learning Package

Self Assessment Question

(a) Why and how is a steel wire suspension rope lubricated?

(b) Why does a rope have a safety factor, and what is the minimum value of safety factor to meet BS EN 81-1?

Solution

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"The safety factor of the suspension ropes shall be at least:

(i) 12 in the case of traction drive with 3 ropes or more;

(ii) 16 in the case of traction drive with 2 ropes."

The actual safety factor for the rope is determined using the maximum force before the rope breaks (from the test certificate), and the actual load placed on the rope.

Here's the SAQ solution for you to check against your learning.

When you're satisfied with the comparison between your solution and ours, click here to go back to the Learning Package.

Return to Learning Package

Introduction to Lift Technology — Assignment 2

Learning Packages 8 through 14

It's time to undertake your second Computer Marked Assi
http://testing.exambuilder.com fill in your name and student

To help you prepare for the test, all the questions are presen
the test is intended to help you check your own understandin
packages to find the correct answers to the questions. Indeed

Attempt ALL TEN questions

For each question, select the answer A, B, C or D appropriat

When you have completed the on-line test, the test system
your understanding of tee questions you have answered corr
you didn't get right!).

1. Which of the following rope termination methods can be out on site without special equipment?

   A. Swaged Termination
   B. Metal or resin-filled conical sockets.
   C. Self-tightening wedge type sockets
   D. Ferrule secured eye terminations

2. Effective traction occurs in a lift system when :

   A. The critical value of traction T_1/T_2 is exceeded.
   B. The suspension ropes are over lubricated.
   C. The lift car is excessively overloaded.
   D. The critical traction ratio is not exceeded.

Spread through the learning packages there are "Computer Marked Assignments" (CMA's)

The questions are shown in your pack of learning materials so that you can prepare your answers before you go "on-line" to attempt the CMA.

The CMA's are "open book", i.e. you can make full use of the Learning Materials as you do the CMA, and you can use your pre-prepared answers to complete the on-line test!

Introduction to Lift Technology Assignment 2

Learning Packages 8 through 14

It's time to undertake your second Computer Marked Assignment. To do the assignment you will need to log on to the Internet at http://testing.exambuilder.com fill in your name and student ID and then complete the on-line multiple choice test.

To help you prepare for the test, all the questions are presented here so that you can prepare your answers before you sign on. Of course, since the test is intended to help you check your own understanding of the learning material, it is quite in order for you to research through the learning packages to find the correct a wers to the questions. Indeed, that is precisely what we intend that you should do.

Attempt ALL TEN questions

For each question, select the answer C or D appropriate to your researches.

When you have completed the on-line e test system will give you your score, and will also give some feedback so that you can confirm your understanding of tee questions you h wered correctly (and also give you some indication of where you went wrong on any questions you didn't get right!).

1. Which of the following rope termination me be carried out on site without special equipment?
   - A. Swaged Termination
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2. Effective traction occurs in a lift system when :
   - A. The critical value of traction T_1/T_2 is exceeded
   - B. The suspension ropes are over lubricated.
   - C. The lift car is excessively overloaded.
   - D. The critical traction ratio is not exceeded.

3. Which kind of ropes may be described in the following manner?
   "They are attached at either end, to the underside of the car and counterweight. Their function in the lift system is to avoid rope slip. They are particularly useful on long travel lifts."
   - A. Governor rope
   - B. Safety rope.
   - C Suspension rope.
   - D Compensation rope.

When you're ready with any 'crib sheets' you feel you need, click on this link and it will take you to the ExamBuilder website to do the test.

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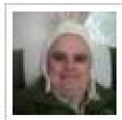


Logged in as
Your Name

LIFT AND ESCALATOR INDUSTRY ASSOCIATION

GT1F3 Introduction to Lift Technology - CMA2

PROGRESS

2 of 10 questions answered

Question 3 of 10

3. Which kind of ropes may be described in the following manner?
   "They are attached at either end, to the underside of the car and counterweight. Their function in the lift system is to avoid rope slip. They are particularly useful on long travel lifts."

A Governor Rope

B Safety Rope

C Suspension Rope

D Compensation rope

Submit Answer | Skip Question | Flag Question

ACTIONS

Submit Exam

Review Questions

Exit Exam

Powered by
EXAM BUILDER

And here's question 3 from the CMA as it appears in ExamBuilder

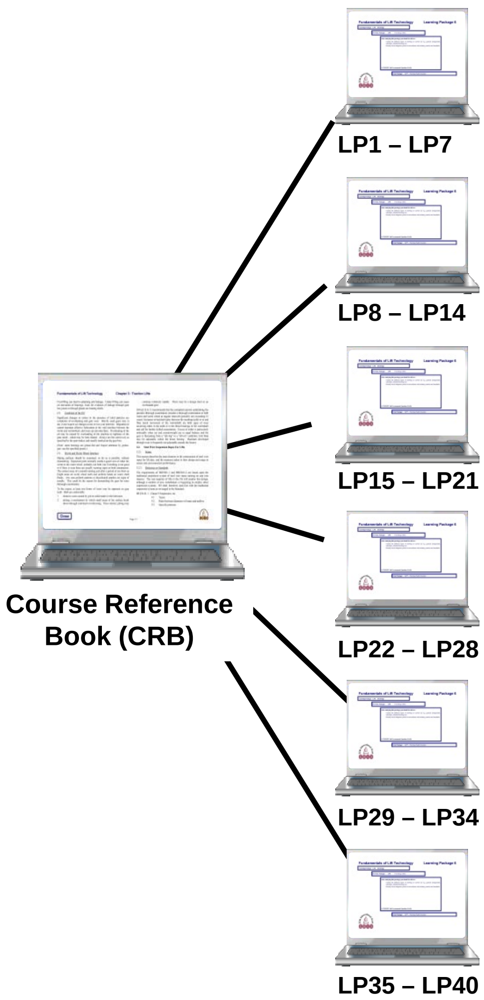
The Structure of the Study Programme

Structure of the Study Programme

Course Reference Book (CRB)

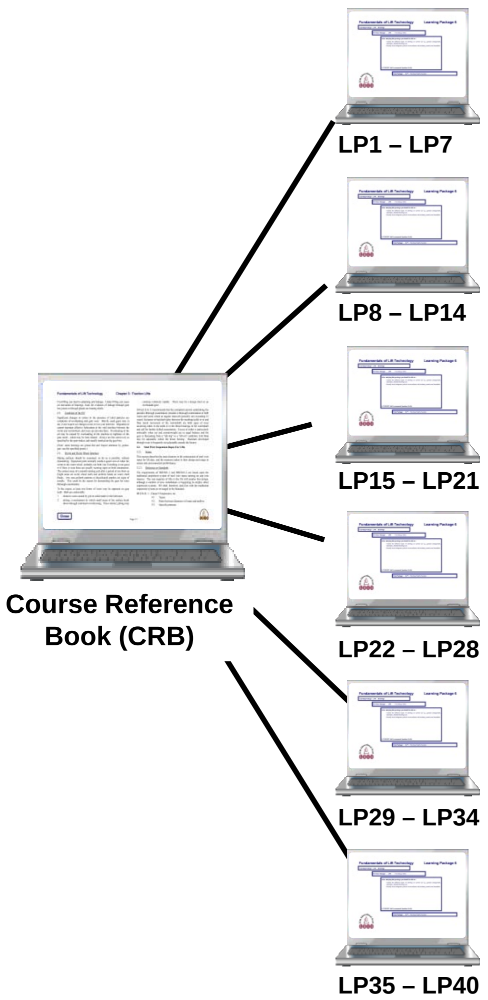
- The heart of the unit is the Course Reference Book (CRB)
- CRB has been prepared by a Senior Industry Expert in the relevant discipline (Engineering, Contracts etc.)
- Periodically updated <u>by the Industry</u> to reflect current practice and standards
- However, current and past practice continue to be included where relevant to existing product in the field

Structure of the Study Programme



- A set of 40 Learning Packages (LP's) based on the CRB is then provided
- Learning packages break down the learning into manageable instalments
- You need to complete a learning package roughly every 5 days
- Each learning package has a "Self Assessment Question" (SAQ) to help you check that you've "got the drift" of that package
- If you can't follow an LP, take it to your Company Contact or Supervisor who will put you in touch with one the Company's engineers to help

Structure of the Study Programme



- If you can't follow an LP, take it to your Company Contact or Supervisor who will put you in touch with one the Company's engineers to help
- If they are unable to help, you may pass your query to LEIA; we will assist, but we do not have the resources of a university. Your query will have to be assigned to a committee member for response – this may take a few days.
- Send your query to enquiries@leia.co.uk
- AND include your cohort – this will speed up the administration of your query.
- Your cohort is in the form 1309GT1F3, i.e. semester (year, month) and unit.

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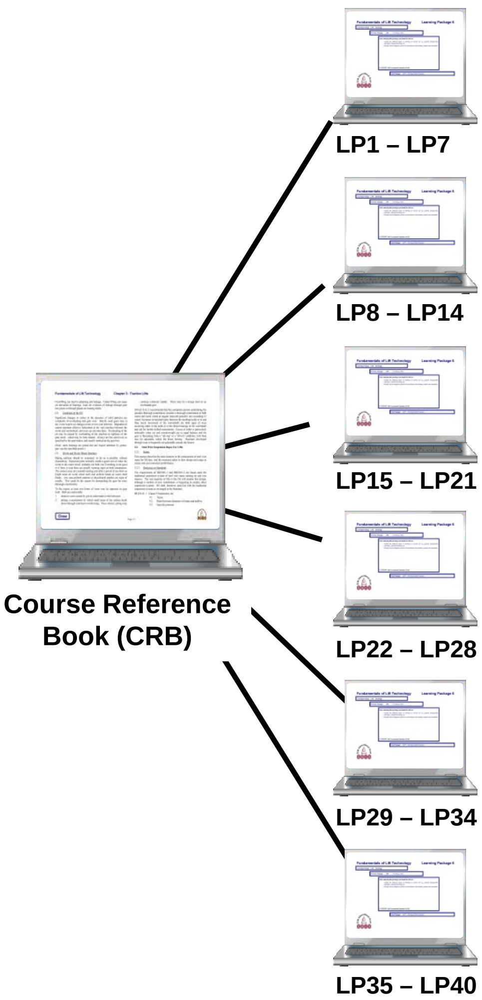
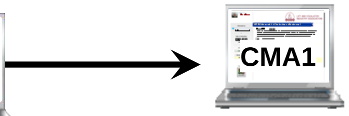
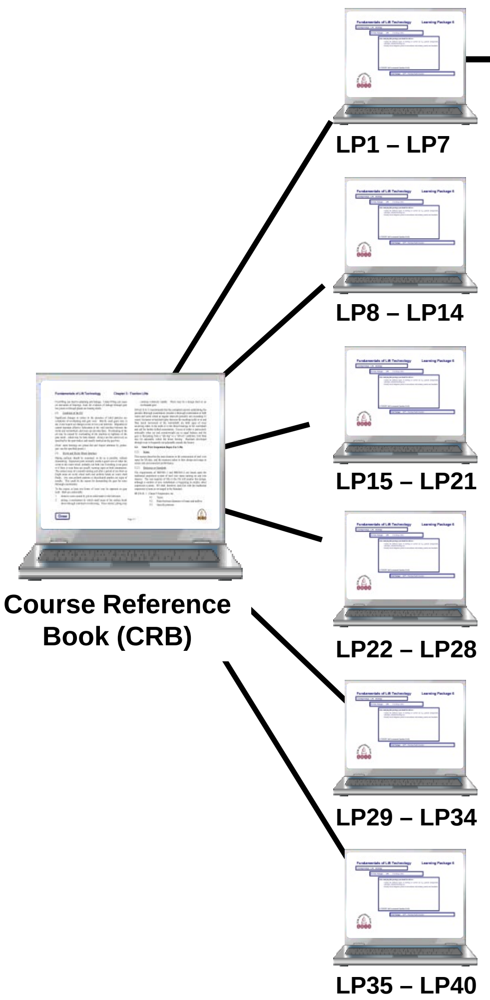
Structure of the Study Programme



- The learning packages are, in the main, 3 -5 pages long
- They cross reference to relevant parts of the CRB
- The CRB cross references are ‘linked’ from the LP
- Sit down and read through an LP and its cross references in a single evening
- Re-read it all carefully the next evening
- On the third evening, read through again and then try the Self Assessment Question

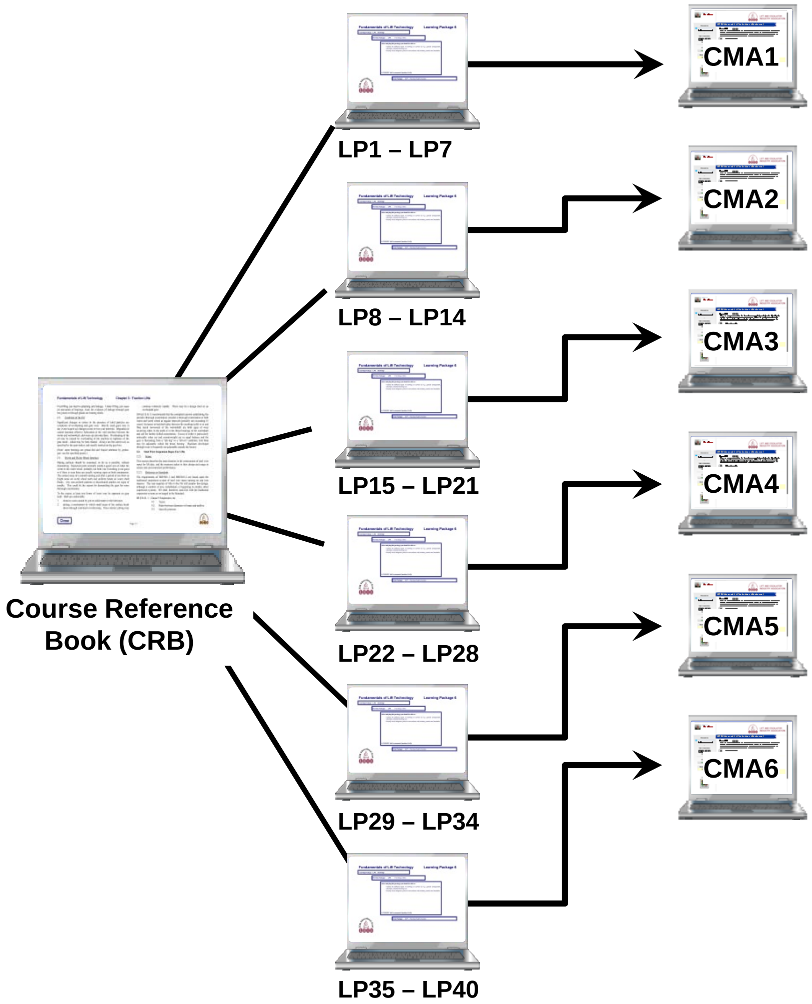
Structure of the Study Programme





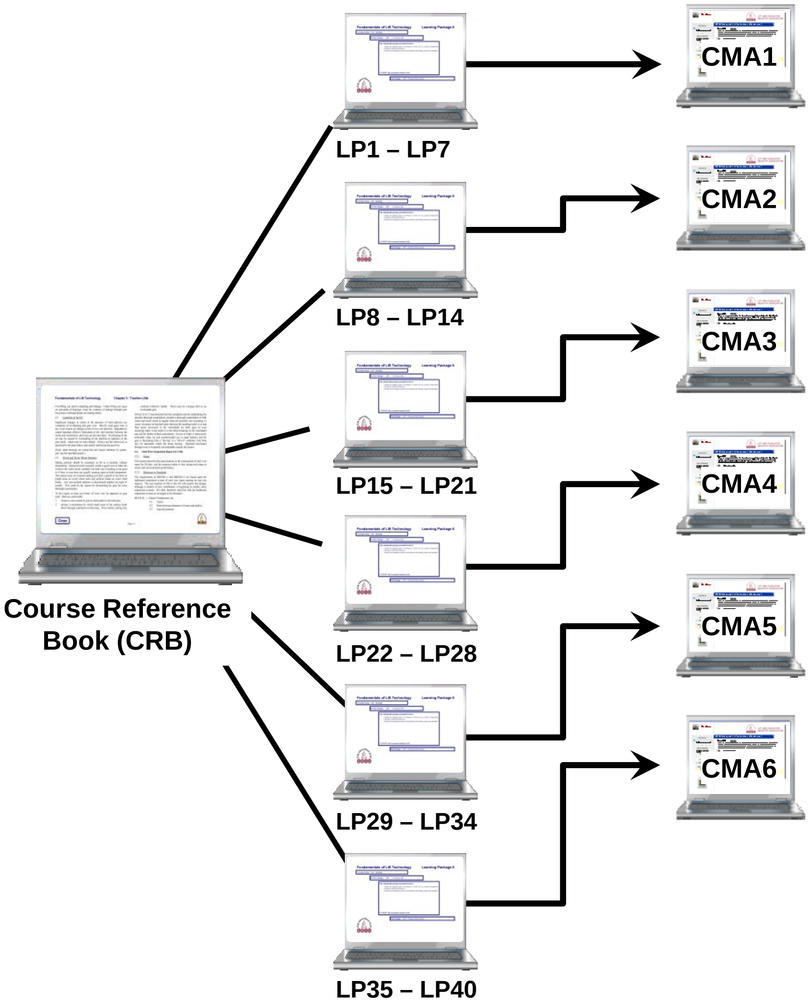
- After every seven learning packages, you'll come to a "Computer Marked Assignment" (CMA)
- A copy of the CMA is included in your learning materials
- It will set ten "multiple choice" questions based on the seven LP's you've just completed
- Having studied the LP's, you can prepare your answers, check them against the LP's and prepare a 'crib-sheet' if you want to
- You then sign on to the Exam Builder software (https://testing.exambuilder.com) and complete the CMA 'on-line' **BEFORE THE TIMETABLE DEADLINE DATE**
- It's quite in order to have your LP's, CRB and crib-sheet to hand whilst completing the CMA!

Structure of the Study Programme



- The CMA's are a kind of 'group' Self Assessment Question, but also let you build credit towards your final mark
- There's a total of six CMA's to complete for a full unit and three for a half unit
- The computer will give you one mark for each **completely correct** answer
- Your overall average mark for the CMA's will count for 20% of your final mark

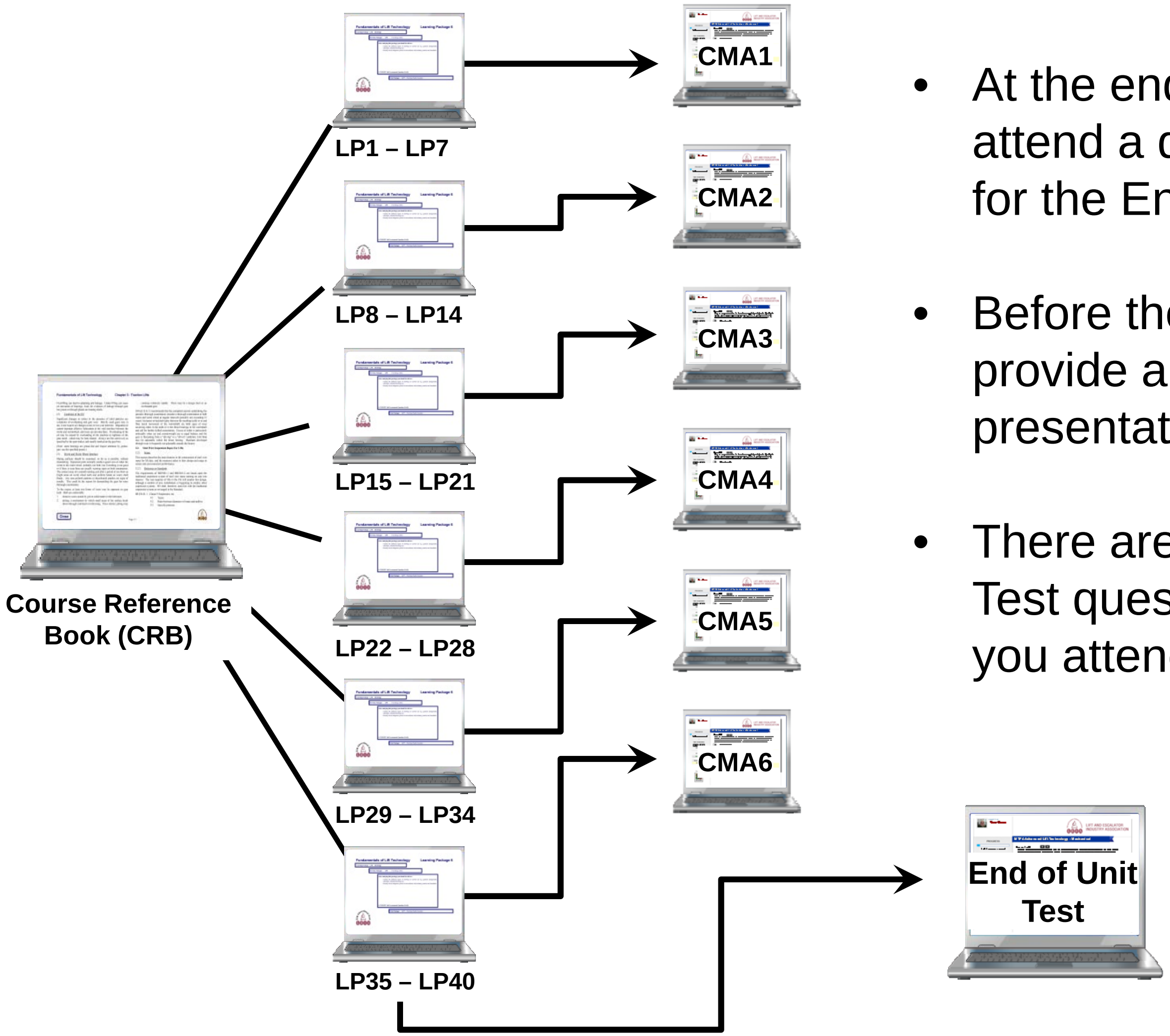
Structure of the Study Programme



ELEPHANT TRAP!

- I'm an experienced Lift Mechanic – all that reading's going to take up too much "pub-time"
- I'll go straight to the CMA's and do them immediately, using the LP's and CRB to 'look up' the answers
- Many have tried this approach, and many have failed their Unit!
- **Getting marks in the CMA's by this method does not guarantee success in the End of Unit Test**

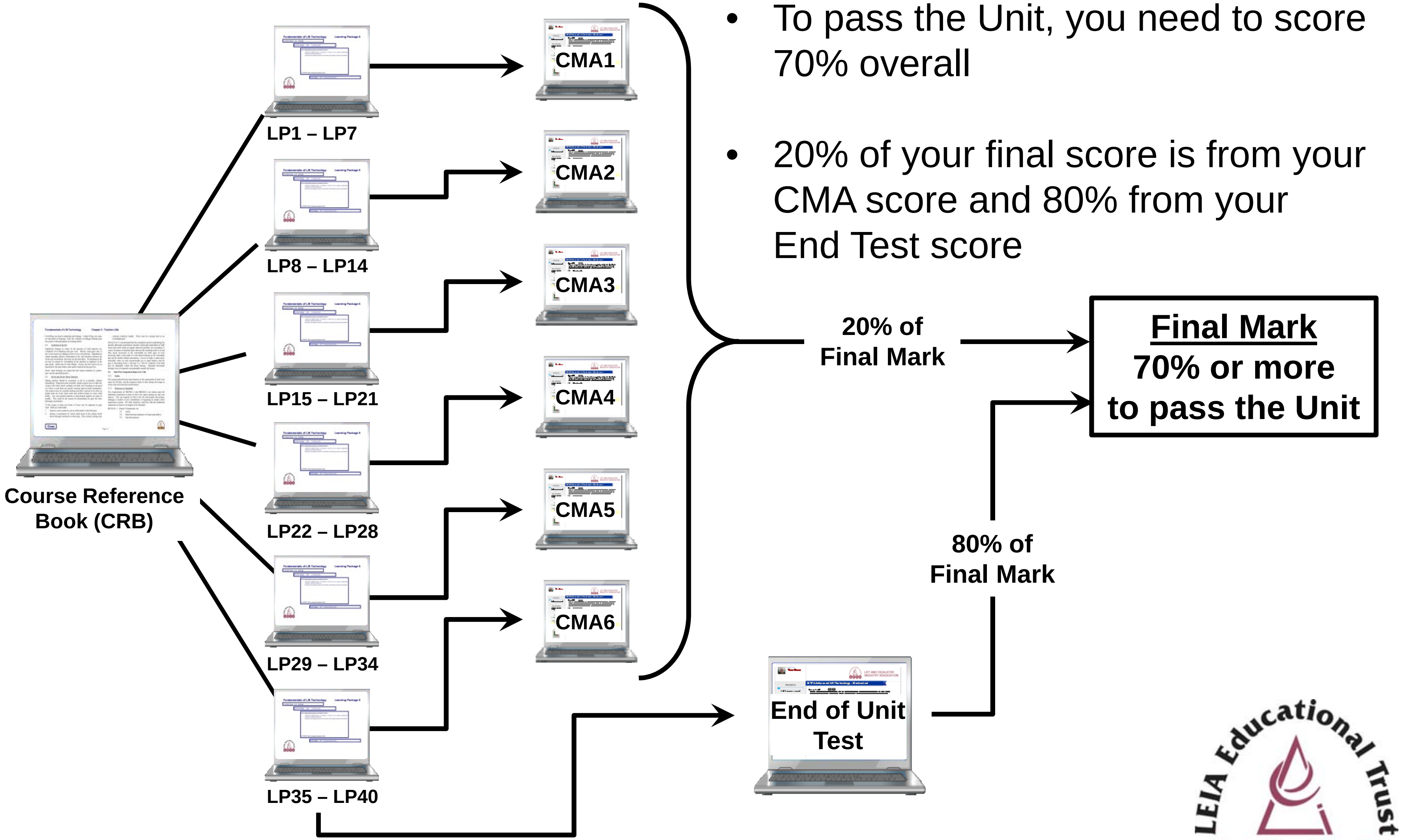
Structure of the Study Programme



- At the end of the unit, you will attend a designated test centre for the End of Unit Test
- Before the End of Unit Test, we provide another guidance presentation describing the Test
- There are also some sample End Test questions you can try before you attend

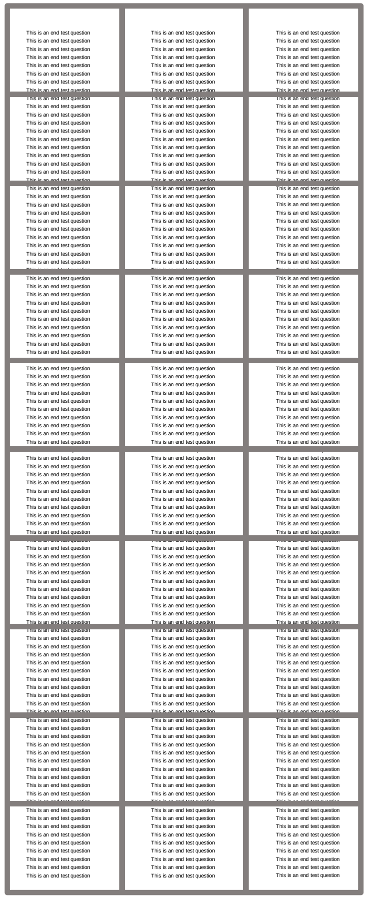
Structure of the Study Programme

- To pass the Unit, you need to score 70% overall
- 20% of your final score is from your CMA score and 80% from your End Test score



The New LEIA Distance Learning Course

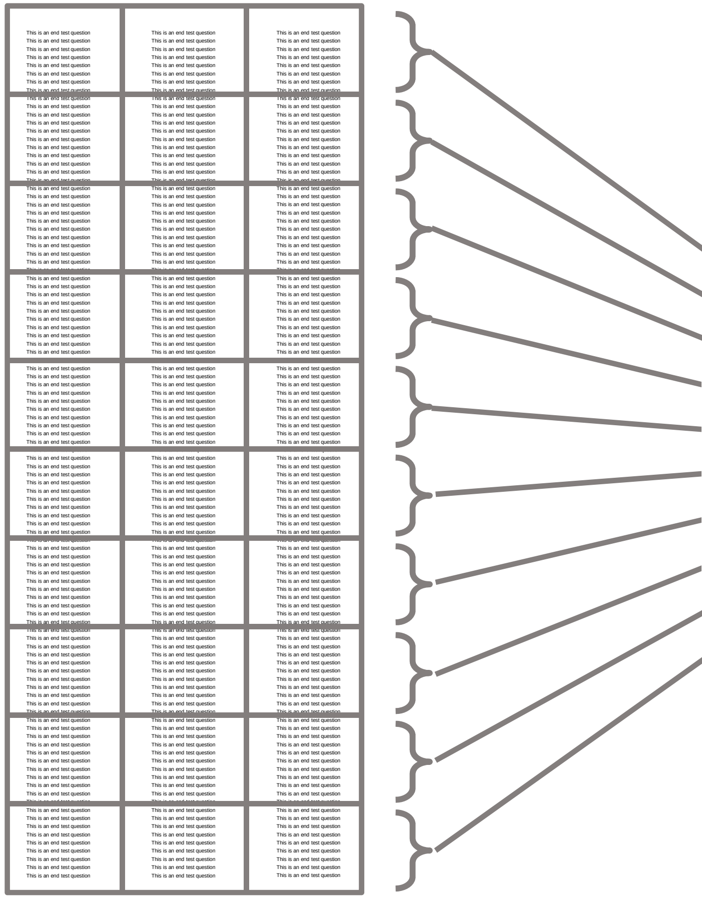
Structure of the End Test



Bank of up to
160 questions

The End Test will ask 30 questions taken from across the whole set of Learning Packages and the sections of the Course Reference Book which have been cross referenced from the Learning Packages

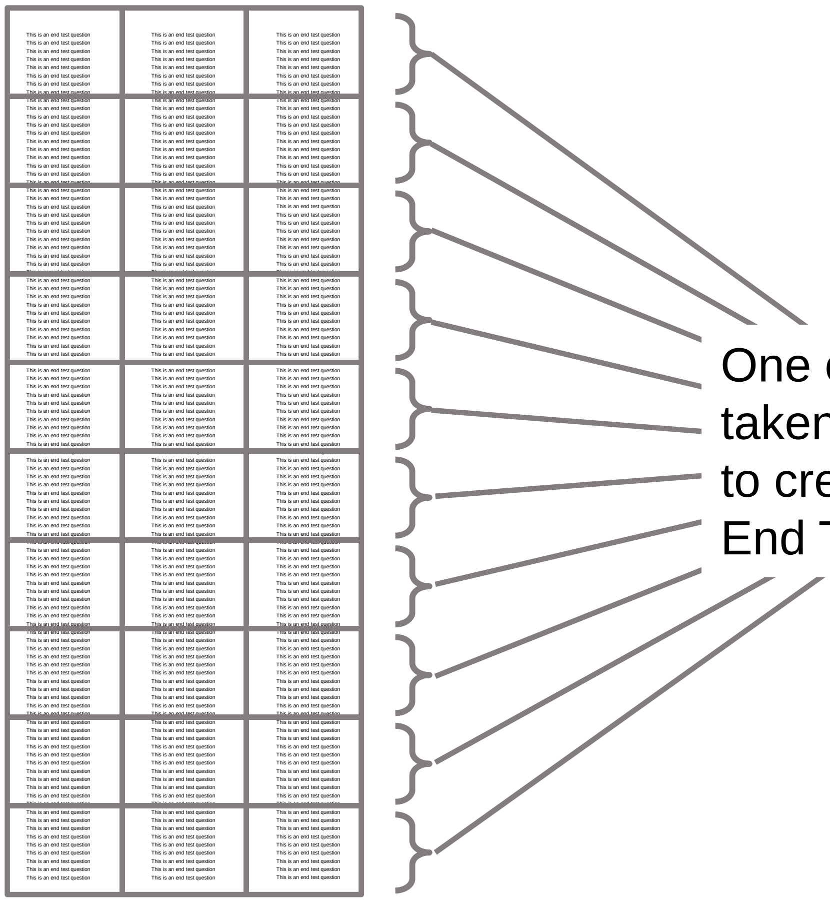
Structure of the End Test



Question bank is split into 15 or 30 groups or ‘pools’ covering the whole unit

Bank of up to 160 questions

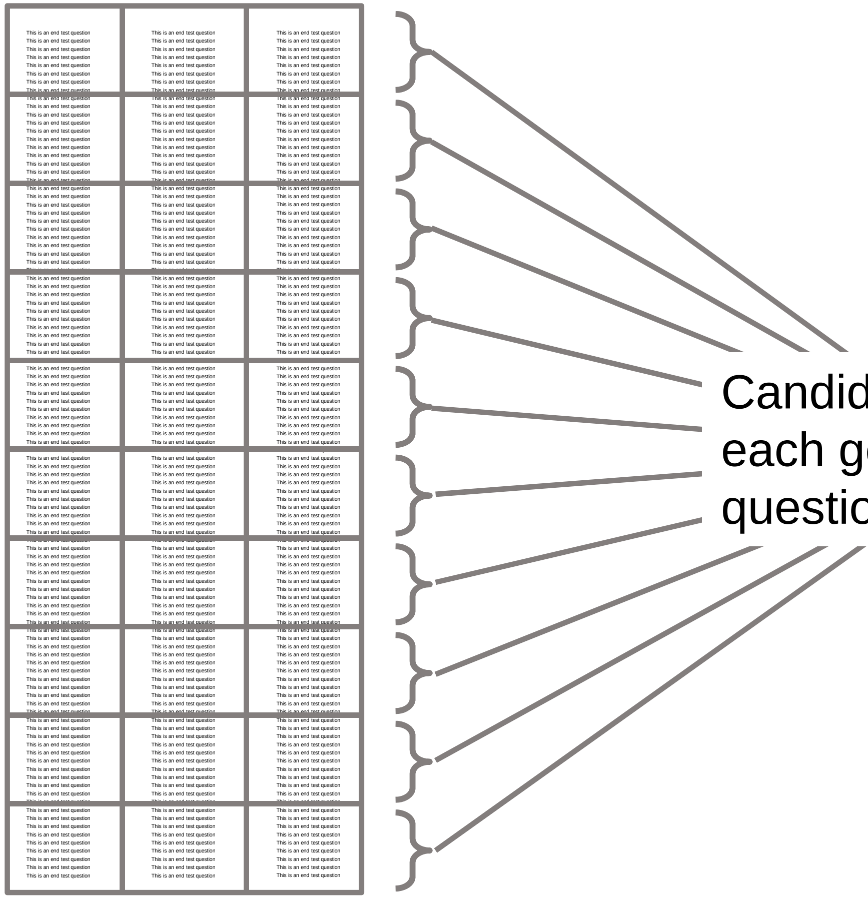
Structure of the End Test



One or two questions taken from each ‘pool’ to create an individual End Test of 30 questions

Bank of up to 160 questions

Structure of the End Test



Candidates on the same unit each get a different set of questions from the question bank

Bank of up to 160 questions

Types of End Test Question

Two basic types of question :

- Multiple choice
- Fill in the blank

Multiple Choice Questions

- Multiple choice questions will have between 2 and 5 alternative answers to choose from
- You may be asked to choose the required answer from amongst the alternatives

  or

- You may be asked to choose more than one answer from amongst the alternatives
- In the end test, some credit is given for “part correct” answers (unlike the CMA’s where only completely correct answers will score)

“Fill in the Blank” Questions

- May ask you for a standard lift parameter relevant to your unit, e.g.

  “The maximum permitted gap between car and landing sills is ………… mm”

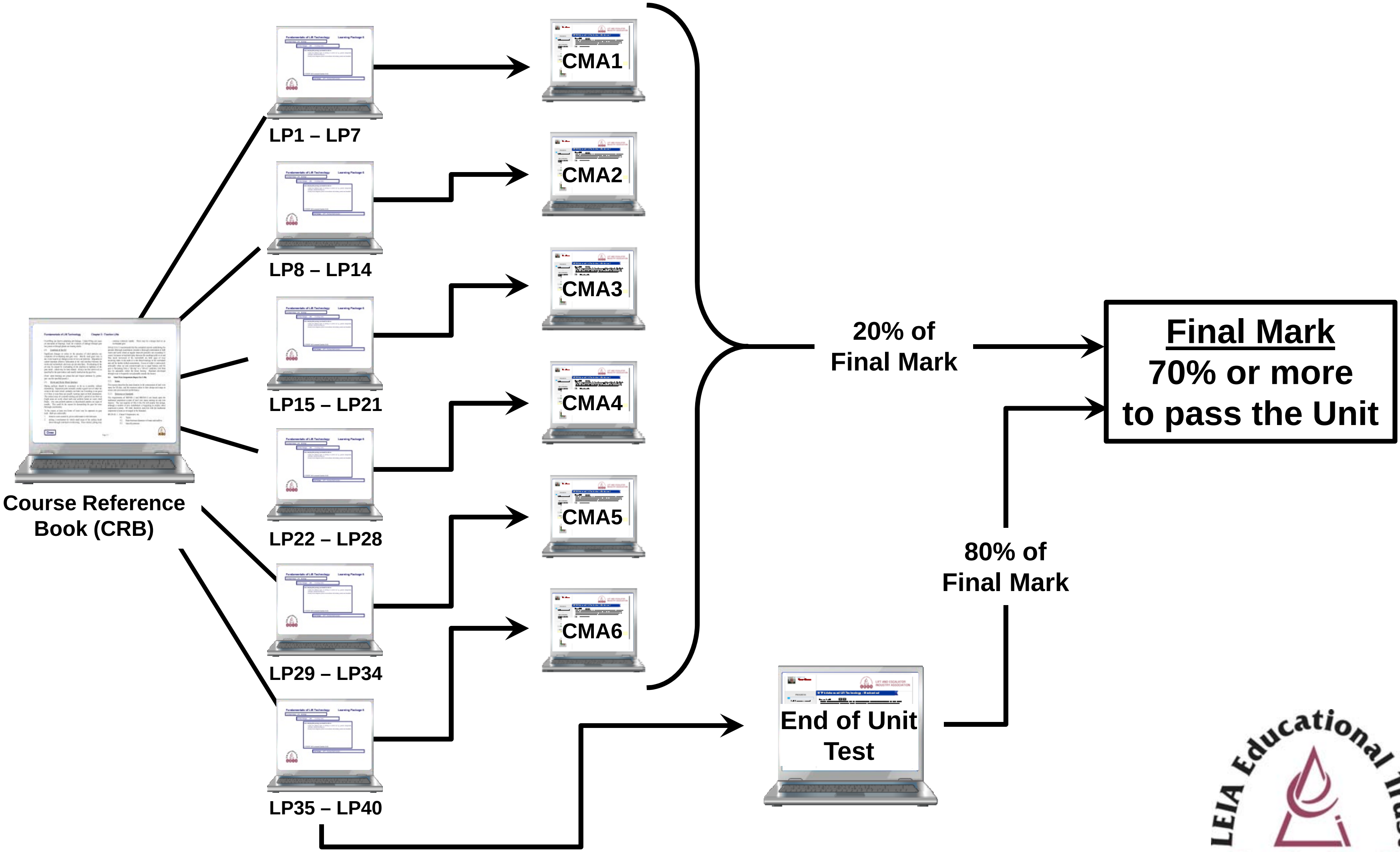
- May ask you for the outcome of a calculation relevant to your unit, e.g.

  “The rotational speed of the traction sheave is given by the expression

$$n_2 = \frac{60V_R}{\pi D}$$

  where D is the sheave diameter and V_R is the rope speed. For rated speed 1.6m/s, 1:1 reeving and motor speed 920rev/min, if the speed reduction ratio is 55:4, then accurate to ±1mm, the diameter of the traction sheave must be ………………… mm”

Structure of the Study Programme



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If you've followed through this slide show, and also read the Study Guide in your Learning Materials Pack, your Unit of Study shouldn't have too many surprises in store!

By undertaking this study, you are making an important contribution to raising, even further, the high standards of technical quality and excellence of your industry.

We hope that you'll find your Unit informative, interesting and enjoyable, and we wish you every success in your studies.