



Delegate Booklet

Course Title: Pearson Edexcel International Advanced Level
Mathematics: Welcome to Pearson

About this event

Course Title: Pearson Edexcel International Advanced Level Mathematics:
Welcome to Pearson

Aims and Objectives of the event

In this training, delegates will:

identify how the qualifications are devised

review the content of the qualification

explore how to plan the course and/or lessons

understand the assessment of the qualification and how to prepare students

identify the support available from Pearson

network and share ideas with other teachers.



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Agenda

Time	Item
10:00	Introductions
10:10	Welcome to Pearson – getting a good start
10:25	Session 1 The content of the course
11:10	Session 2 How is the content assessed?
11:30	BREAK
11:45	Session 2 continued
12:45	Lunch
13:00	Session 3 Marking and mark schemes
13:45	Session 4 – Support from Pearson
16:00	End of training



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An extract from the Pure 1 Specification

What students need to learn:		Guidance
1. Algebra and functions		
1.1	Laws of indices for all rational exponents.	$a^m \times a^n = a^{m+n}$, $a^m \div a^n = a^{m-n}$, $(a^m)^n = a^{mn}$ The equivalence of $a^{\frac{m}{n}}$ and $\sqrt[n]{a^m}$ should be known.
1.2	Use and manipulation of surds.	Students should be able to rationalise denominators.
1.3	Quadratic functions and their graphs.	
1.4	The discriminant of a quadratic function.	Need to know and to use $b^2 - 4ac > 0$, $b^2 - 4ac = 0$ and $b^2 - 4ac < 0$
1.5	Completing the square. Solution of quadratic equations.	Solution of quadratic equations by factorisation, use of the formula, use of a calculator and completing the square. $ax^2 + bx + c = a\left(x + \frac{b}{2a}\right)^2 + \left(c - \frac{b^2}{4a}\right)$

An extract from the statistics 1 specification

What students need to learn:		Guidance
1. Mathematical models in probability and statistics		
1.1	The basic ideas of mathematical modelling as applied in probability and statistics.	
2. Representation and summary of data		
2.1	Histograms, stem and leaf diagrams, box plots.	Using histograms, stem and leaf diagrams and box plots to compare distributions. Back-to-back stem and leaf diagrams may be required. Drawing of histograms, stem and leaf diagrams or box plots will not be the direct focus of examination questions.



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Assessment Objectives

A01	Recall, select and use their knowledge of mathematical facts, concepts and techniques in a variety of contexts.
A02	Construct rigorous mathematical arguments and proofs through use of precise statements, logical deduction and inference and by the manipulation of mathematical expressions, including the construction of extended arguments for handling substantial problems presented in unstructured form.
A03	Recall, select and use their knowledge of standard mathematical models to represent situations in the real world; recognise and understand given representations involving standard models; present and interpret results from such models in terms of the original situation, including discussion of the assumptions made and refinement of such models.



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A04	Comprehend translations of common realistic contexts into mathematics; use the results of calculations to make predictions, or comment on the context; and, where appropriate, read critically and comprehend longer mathematical arguments or examples of applications.
A05	Use contemporary calculator technology and other permitted resources (such as formulae booklets or statistical tables) accurately and efficiently; understand when not to use such technology, and its limitations. Give answers to appropriate accuracy.



Marking guidelines

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

4. All A marks are 'correct answer only' (cao.), unless shown, for example, as A1 ft to indicate that previous wrong working is to be followed through. After a misread however, the subsequent A marks affected are treated as A ft, but manifestly absurd answers should never be awarded A marks.
5. For misreading which does not alter the character of a question or materially simplify it, deduct two from any A or B marks gained, in that part of the question affected. If you are using the annotation facility on ePEN, indicate this action by 'MR' in the body of the script.
6. If a candidate makes more than one attempt at any question:
 - If all but one attempt is crossed out, mark the attempt which is NOT crossed out.
 - If either all attempts are crossed out or none are crossed out, mark all the attempts and score the highest single attempt.
7. Ignore wrong working or incorrect statements following a correct answer.



Extract from a Principal Examiner report

Points to note for future exams are

- Candidates should take care when using a calculator to find the solutions of equation especially when the questions demands that they 'show using algebra' or 'show all steps of their working'. This was true in Q2 and Q5 where a sizeable majority of candidates merely wrote down answers.
- Errors when using radians were common. This seems to be an area of weakness for a great many candidates.
- Candidates need to care when sketching graphs. There were many occurrence's when a sketch of $\sin x$ in Q9 (b) looked linear and the one for $\tan x$ appeared in the wrong regions.
- 'Show that' questions are always found to be more difficult. In this paper Q9(b) was poorly attempted with many candidates failing to satisfy the demand of the question.

Extract from a Principal Examiner report

Question 4 (Mean Mark 3.7 out of 5)

It was pleasing to note that most candidates knew that the given expression had to be written as a sum of terms before the integration was attempted. There is still a misconception, however, about how this should be carried out with many getting one of terms wrong.

Common errors included:

- $\frac{4x^2+1}{2\sqrt{x}} = 4x^2 + \frac{1}{2}x^{-\frac{1}{2}}$
- $\frac{4x^2+1}{2\sqrt{x}} = (4x^2+1)2x^{-\frac{1}{2}} = 8x^{\frac{3}{2}} + 2x^{-\frac{1}{2}}$

Once the correct sum was formed candidates generally performed the integration correctly with only a few making fractional or sign errors. The failure to add the constant of integration $+ c$ was also seen.

Activity 1 - Continuity from International GCSE to A level

Purpose: Use the extract from the Edexcel International GCSE specification and the specification for Pure 1

Complete the table to summarise your findings on how much common material there is between the two.

To find the nature of the continuity between the two courses especially Pure 1

Activity 2 - Question writing exercise

Use the content of Pure 1, sections 1.1 to 1.5 to write a question which would assess student's ability.

Write an answer to go with the question.

To give delegates an opportunity to think about the process of writing a question.

(You can write your question in the space below (and next page)



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(Space for activity 2)

Activity 3 - Introduction to Assessment Objectives

What general mathematical abilities would you require from Students following an A level course in mathematics?

Write down at least three in your delegate book

To introduce delegates to the notion of Assessment Objectives



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Activity 4 - Content of Practice Pure paper 2

Use a copy of the Specification for Pure 2 to find the coverage of the content in the Practice paper Pure 2

To find the coverage of the content of the Specification in an A level paper

Use the copy of the Pure 2 specification and the practice paper Pure 2 to find the coverage of the paper.

Record your findings here:

Question number	Specification Content Reference / Topic Area / Sub Topic
1	4.5 Binomial expansion
2	
3	
4	
5	
6	
7	
8	
9	
10	



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Activity 5 - Assessment Objectives on a paper

Purpose: Look at the two questions together with the mark schemes for them

Give AO marks to each of the questions.

To investigate the allocation of marks to AOs in a paper

Record your marks on the response sheet.

Activity 6 - Continuity from International GCSE to A level

Purpose: Suggest some other types of questions where working **MUST** be shown because of issues over use of a calculator.

Write these in the space below.

To think about the issue of calculators on an A level papers



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Activity 7 - Assigning marks to a question

Purpose: Decide which processes should be paired to get a mark.

Record your decision on the response sheet

To decide how to allocate marks to a question

Activity 8 - Marking exercise

Purpose: To mark some student answers

Use the mark scheme to mark the student answers.

To gain experience in marking using a mark scheme.

Question	Marks	Comment
A		
B		
C		
D		
E		
F		



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Task How could you see Access To Scripts (ATS) and ResultsPlus being used on a unitised (modular) course?

Write down 3 suggestions in the space below.

PERSONAL LEARNING

Things to do:

-
-
-
-
-

Things to avoid

-
-
-
-
-

Your ideas:

(To be completed by delegates)