



Institute
and Faculty
of Actuaries

A Guide to CM1 and CM2 Examinations for the 2022 examinations

February 2022

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Introduction to Actuarial Mathematics (CM1 and CM2)

This guide should help answer your questions about CM1 and CM2, including:

- the format of the online examinations;
- guidance on how to take the examinations;
- administrative information

If you have any further questions that are not covered in this guide, please contact the Member Services Team: memberservices@actuaries.org.uk

Past papers for CM1 and CM2 examinations are available on the IFoA website: <https://www.actuaries.org.uk/studying/prepare-your-exams/past-exam-papers-and-examiners-reports>

What is covered in CM1 and CM2?

Subjects CM1 and CM2 are a fundamental part of the Core Principles subjects.

CM1 provides a grounding in the principles of actuarial modelling, focusing on deterministic models and application to financial products. It will equip you with:

- the basic principles of actuarial modelling
- theories of interest rates and
- the mathematical techniques used to model and value cashflows which are either certain or are contingent on mortality, morbidity and/or survival.

CM2 provides a grounding in the principles of actuarial modelling, focusing on stochastic and asset liability models and the valuation of financial derivatives. It will equip you with:

- the theories of behaviour of financial markets
- measures of risk
- determining reserves for a non-life insurer and
- pricing options.

Subjects CM1 and CM2 include both theory and application (using Microsoft word and Excel)

How have CM1 and CM2 been developed?

External direction and guidance were taken into consideration when developing the syllabus for the Core Principles subjects. A summary of these is set out for reference below. Knowledge of these standards and guidance will not be directly assessed as part of CM1 and CM2 examinations.

- Actuarial Profession Standards (APSs)
<https://www.actuaries.org.uk/upholding-standards/standards-and-guidance/actuarial-profession-standards-apss>
- The Actuaries' Code
<https://www.actuaries.org.uk/upholding-standards/standards-and-guidance/actuaries-code>
The Code requires us to “perform professional duties competently and with care” and to “ensure that their communication, whether written or oral, is clear...”.
- International Standards of Actuarial Practice (ISAP)
<https://www.actuaries.org/iaa/IAA/Publications/ISAPs/IAA/Publications/05ISAPs.aspx?hkey=334b21a7-a3ac-4e0e-8294-3cbc755ab14a>

- The regulators
In reviewing a firm's practices, the regulators expect to see acceptable standards of documentation, agreed by the firm, and documented.
- Sarbanes Oxley (SOX or SarBox).
This is American legislation which governs the need for full documentation of internal processes and controls.
- Solvency II
This framework for insurance companies includes emphasis on documentation and evidencing of the calculation work undertaken.

The format of the CM1 and CM2 examinations

Details of the syllabus for CM1 and CM2 can be found at:

<https://www.actuaries.org.uk/studying/curriculum/actuarial-mathematics>

The assessment of CM1 and CM2 subjects will each consist of two examinations, Paper A and Paper B.

You can expect to answer questions of varying marks across both examinations in line with the syllabus topic weightings and skill levels outlined in the subject syllabus.

Paper A consists of a number of question where you will need to construct and type answers in word. The duration of this examination is three hours and 20 minutes and is timed and online.

In Paper B you will use excel to answer another set of questions. The duration of this exam is one hour and 50 minutes and is timed and online.

A final combined mark is awarded for each subject, determined by the weighting of the paper. Paper A has a weighting of 70% and Paper B has a weighting of 30%. In order to pass the subject, the combined mark must be equal to or exceed the pass mark for the subject. Further information on marking is found here: <https://www.actuaries.org.uk/studying/after-exams/marking-and-publication-results>

The timing of the CM1 and CM2 examinations

Examination dates for 2022 can be found at:

<https://www.actuaries.org.uk/studying/my-exams/exam-dates>

Paper A and Paper B will be scheduled over two consecutive working days where possible. Where this is not possible, there will be no more than a two working day delay between each examination. Your examination booking confirmation will show the date and time of each examination.

Joining institutions will be available for you to download from the members' area of the IFoA website at 2 weeks before of the start of the examination session. Your joining instructions will include information on how to create and verify your details on the IFoA online exam platform and how to complete online exam platform equipment checks.

Note: Reading time is included in the overall examination time. It is up to you to manage your time between reading through the paper and starting to answer the questions. There is guidance on this and Hints and Tips

at: <https://www.actuaries.org.uk/system/files/field/document/How%20to%20use%20your%20examination%20time%20%28amended%20for%20online%20examinations%29.pdf>

What examinations should I have passed before sitting CM1 and CM2?

You do not have to pass any other examination prior to attempting CM1 or CM2.

There are a number of foundation topics that are assumed knowledge for CM1, including summarising data sets, basic probability theory and random variables. You may wish to ensure you are familiar with these topics before studying for CM1.

CM2 builds on many of the principles covered in CM1, so you may wish to ensure you are familiar with the topics covered in CM1 before studying CM2.

You are advised that Formulae and Tables books may be required for these assessments. You may use your own personal copy or you can purchase a copy through the e-shop at:

<https://www.actuaries.org.uk/shop>

A soft copy of the Formulae and Tables can also be found in our [website](#).

I want to sit the examination. What do I need to do?

Information can be found on the IFoA website:

<https://www.actuaries.org.uk/studying/exam-bookings>

What software do I need?

For the 2022 examinations (April and September) the computer on which you will complete your exam will need to have access to the following (please ensure you have access prior to the examinations):

Examination	Microsoft Word/Excel Version Required	Other requirements
CM1A	Microsoft Office 2013 (Word)	
CM1B	Microsoft Office 2013 (Excel)	IFoA provide Excel answer workbook
CM2A	Microsoft Office 2013 (Word)	
CM2B	Microsoft Office 2013 (Excel)	IFoA provide Excel answer workbook

What knowledge of Microsoft Word do I need?

Extensive knowledge of Word will not be necessary for this examination.

Please note, if you use Excel to aid with calculations in Paper A, any calculations or Excel formulae you use must appear in full in your Word answer script to ensure you receive the appropriate marks. If you miss out any of the calculation steps or do not provide sufficient formulae or information then full marks may not be awarded, as the examiners cannot assess how your answer was determined.

What knowledge of Microsoft Excel do I need?

Extensive knowledge of Excel is not part of the examination. However, candidates will be expected to perform calculations effectively using Excel.

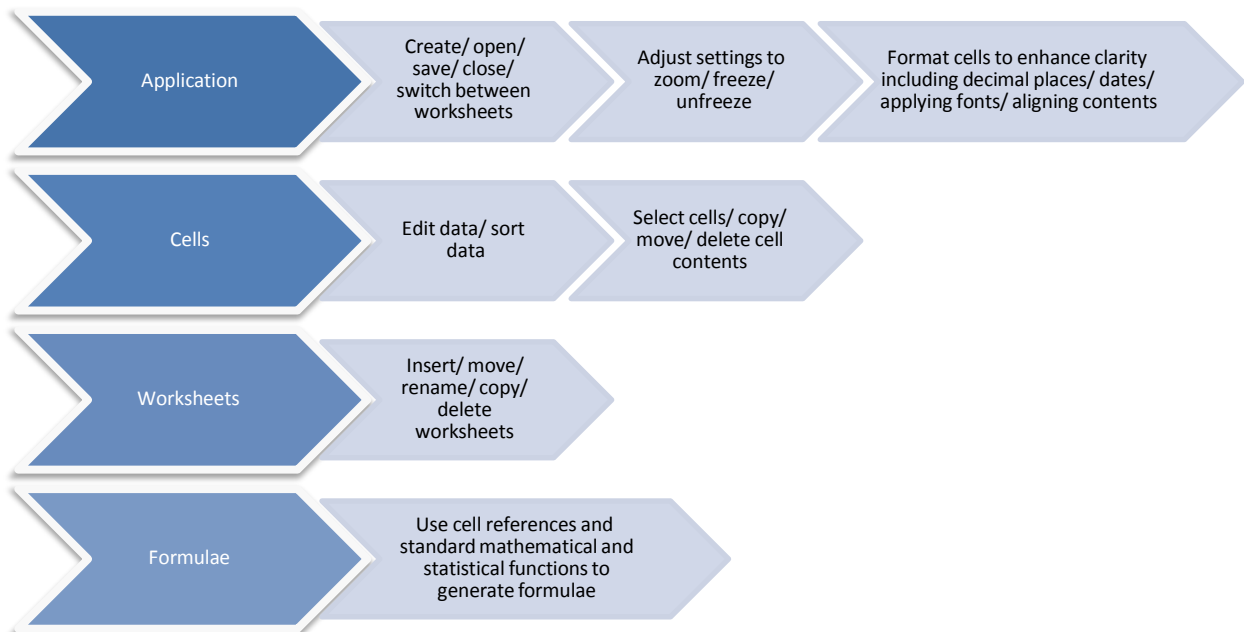
Candidates who have limited experience or rarely have an opportunity to create spreadsheets are encouraged to practice before sitting the examination. There are sample examination assignments on the IFoA website.

Below is an indication of the excel functions that candidates should be able to use, as well as know how to sort data and create and modify charts. Exam questions are designed not to require advanced excel techniques. Candidates should not use in-built employer Excel functions nor user defined Excel functions.

Candidates are unlikely to be required, in any one examination, to use all of the functions listed here:

AVERAGE STDEV MIN / MAX MEDIAN LARGE / SMALL	SUM PRODUCT SUMPRODUCT SUMIF COUNT	COUNTIF VLOOKUP HLOOKUP INDEX OFFSET IF GOALSEEK	AND/OR NOT ROUND ABS INT
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Candidates are recommended to look up the details of how to use the below features before the exam. Further information and help are available free and online as well as through many reference books and the Help facility in excel itself.



Where can I get find more information?

The Examination Handbook contains more information on how to prepare for your exam, what happens on the day of your exam and what happens after your exam. You can find it here <https://www.actuaries.org.uk/studying/student-and-exam-news/qualification-handbook>

The IFoA Qualification Handbook contains key information, guidance and support for all Student members of the IFoA and Associate members who are working towards Fellowship qualification. You can find it here <https://www.actuaries.org.uk/studying/student-and-exam-news/qualification-handbook>

The IFoA Assessment Regulations document contains the regulations that all candidates are required to follow when sitting an IFoA assessment. If you fail to follow these regulations your assessment may be investigated. You can find it here <https://www.actuaries.org.uk/studying/prepare-your-exams/assessment-regulations>