PROJECT

Subject	ACTUARIAL SCIENCE/MATH FINANCE
Title of paper	MA7404 — MODELS
Time allowed	<u>Deadline: Friday, December 11th 2015, 16.00</u>

Instructions to candidates

This project represents 30% of the module assessment.

You are required to write a report of approximately 5,000 words. You must work individually and all submitted reports will be checked for plagiarism using on-line tools.

Any literature used should be formally cited.

1. A building society offers a variety of different mortgages, and would like to set up a mortgage calculator on their website to help customers choose mortgages that suit them best. A customer should enter some information (eg. house price, current salary, etc.), and the objective (eg. to pay off the mortgage as soon as possible), and get a recommendation.

   The building society hires you to write a report explaining the mathematical model that you are asked to advance, in order to achieve the required mortgage calculator. Your report should include a discussion of the need for the models you choose, the key steps that have to be adopted in the modelling process, a list of relevant input parameters required for the construction of the calculator, a description of a stochastic model that accounts for the variability of mortgage rates in the future, and suggestions for presenting the model output in a convenient way.

   You are encouraged to use VBA to implement the calculator.

   Total: 100 marks