Department of Mechanical Engineering

UNIVERSITY OF **BATH**

EXAM ASSESSMENT GENERIC FEEDBACK FORM			
UNIT NUMBER AND TITLE	**ME10305 Mathematics 1**	UNIT CONVENOR(S)	**Dr DAS Rees**
DATE	June 2021		
QUESTION 1	**ODEs.** Average 9.1/10. Well answered.		
QUESTION 2	**Laplace Transforms.** Average 8.9/10. Part (c) was very long but was answered well by the great majority.		
QUESTION 3	**Determinants/GE.** Average 9.3/10. Exceptionally good. Some used GJ when I asked for GE.		
QUESTION 4	**Fourier Series.** Average 6.9/10. Some problems with the sketching. The solution of the ODE was done well only by a large minority of the class.		
QUESTION 5	**Least Squares.** Average 8.8/10. Chief issue was not being able to solve the 2x2 matrix/vector system. Some premature use of rounding.		
QUESTION 6	**Iteration schemes and root-finding.** Average 8.4/10. Some very nice work here. Many lost marks for the sketch.		
QUESTION 7	**ODEs using eigenvectors.** Average 9.1/10. Again some very nice work here.		
QUESTION 8	**ODEs using Laplace Transforms.** Average 7.7/10. This split the class. Many got full marks while others struggled. After taking the LT, it is safest to adopt a matrix/vector approach and it leads to the solution very quickly. Other approaches could take pages.		
QUESTION 9	**ODEs.** Average 8.1/10. These were tricky ODEs. The CFs were found by almost all, but there were surprisingly many who had difficulties with the substitution of the initial conditions.		
QUESTION 10	**Least squares using integration.** Average 3.7/10. This was novel stuff and design to challenge. Some 44 obtained full marks but 120 obtained zero. This question tested the ability to apply known ideas in a different setting.		

The overall average was 80% which is higher than I had hoped but less than I feared and less than last year. I had hoped that Q9 and Q10 would reduce the average to near to 70%, so this ploy was only partially successful.