

Module Code **MM2MS3**
Module Title **Mechanics of Solids 3**
 Convenor(s) Chris Hyde
 Year 2016
 Semester 2

General comments on the paper (these comments refer to the entire class and not individual students)

The biggest and most common errors displayed by the students related to the interpretation/application of the methods to be applied. Generally the methods were understood but the application was not well understood.

Question specific comments on the paper (these comments refer to the entire class and not individual students)

As above.

Comments on specific questions

Question Number	Comments
Question 1	Deflection of Beams - This question required some interpretation in order to define an idealised problem which could then be solved. It is this interpretation that caused the most problems/errors. The steps required to solve the idealised problem once it had been defined were well displayed but several small, mathematical errors were made. Answered by 249/300 students Mean Score: 14.1/25 Median Score: 14/25
Question 2	Asymmetrical Bending - The general concepts of the way in which this type of problem is to be solved were well displayed but the details of the mathematical methods used in order to solve each step were lacking in depth of understanding generally. Several students produced a significant amount of working that was answering a question that had not been asked. Answered by 262/300 students Mean Score: 14.3/25 Median Score: 15/25
Question 3:	Thick Cylinders - a wide range of incorrect approaches provided for this question. A common error was the omission of the analysis of the two cylinders giving two sets of Lamé's constants. Clearly stated assumptions were often missed. Values at the OD and ID could be determined from BCs. The general form of stress variation was well produced by most students even when values were incorrect. Answered by 218/300 students Mean Score: 11.03/25 Median Score: 11/25
Question 4:	Shear Stress - Generally a well answered question - common errors were in the approach to determine the shear stress where multiple areas were considered and some errors were present in the approaches to the simple calculations in part a) and b). The general form of stress variation was well produced by most students even when values were incorrect. Answered by 251/300 students Mean Score: 16.96/25 Median Score: 17/25
Question 5:	Elastic Instability - an unpopular question which required an understanding of the loads in each strut of a system rather than an idealised single strut which the students would have been more comfortable with. Many students displayed a good understanding of the concepts of Buckling but the application to a structure caused difficulty for many. Answered by 48/300 students Mean Score: 11.67/25 Median Score: 11/25
Question 6:	Strain Energy - Generally a well answered question by those who attempted it. Again, however, the biggest problem was the interpretation of the problem presented to the students and the conversion of this into a mathematical problem which they could solve. Answered by 113/300 students Mean Score: 13.76/25 Median Score: 15/25