

1. Introduction

This course will appeal to mechanical engineers and project engineers who deal with FEA and stress analysis reports and would like to increase their understanding and ability to check the work of others.

It is also useful for students who have good academic ability but are not quite sure how all the theory applies to real problems faced in industry.

It will provide a 'leg up' to design engineers who want to expand their skill set to include FEA or stress engineers who are looking for a refresher course.

Having worked as a Stress Engineer or FE Analyst in many industries I decided to write this course to provide the sort of guidance that I wished I had when I first started out. The objective of the course is to give the reader some practical advice on setting up FEA models and what to do with the results. This course does not spend any time teaching you how to operate a particular brand of software but is written in way that is applicable to all general purpose FEA packages.

The best way to learn finite element analysis is to firstly understand how traditional hand calculations compare with FEA results. This gives you greater confidence in your FEA methodology. There are many practical worked examples throughout the course that can be quickly set up with all FEA software packages.

I recommend that you try setting up and running the worked examples with your own FEA software to see if you get the same results. Hopefully by the end of this course you will know how to solve problems by using FEA and have confidence in your results. You also need the ability to convince others of your findings when challenged.

Even if you are right, if you can't persuade other people you are right then you might as well be wrong!