

## CE 8930

### Group Assignment #8

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**Assigned: Saturday, March 8, 2014**

**Due: Saturday, March 15, 2014 (midnight)**

Students are asked to complete vibration testing on two otherwise identical steel plates, one undamaged (without notch) and one damaged (with notch). The objective of this study is to identify (and if possible locate) the presence of damage through the use of vibration testing. The project teams are asked to design and execute the vibration testing<sup>1</sup>, present at least three *successful* vibration response features of their choice and discuss the damage and noise sensitivity, dimensionality and computational ease of each selected feature.

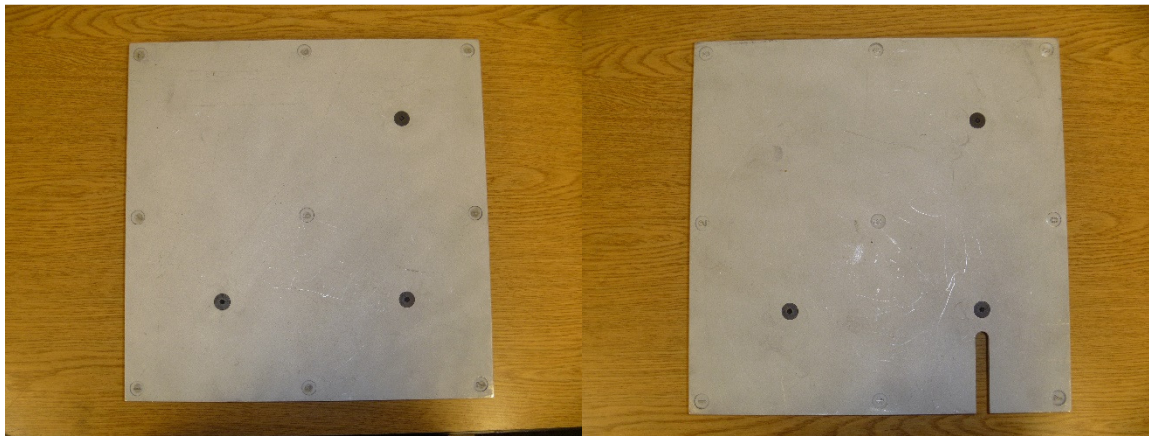


Figure 1: The Steel plate with and without notch.

It is expected that each group may need to evaluate a number of features and only present the best performing three features. Grades will be given considering the success of selected features in satisfying the 'criteria' established in our class for good features.

Each group is asked to submit an all-inclusive report (including references) of no more than 5-pages that presents the details of the completed work from the design of experiments to the detection of damage.

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<sup>1</sup> Providing sufficient evidence regarding the quality assurance of the vibration test results is the responsibility of each group.