

MECH423 Engineering Ceramics

Objectives: To provide advanced information on ceramics
To provide an opportunity for incorporating a ceramic into an engineering design
To provide an opportunity for the in-depth study of a specific engineering application that can only be implemented by using a particular ceramic

Lectures: Cover the physical and mechanical properties of ceramics with an emphasis on:
How the engineering properties of ceramics are affected by microstructure and by the method of manufacture
How the fracture toughness of brittle ceramics can be increased by processing techniques or by reinforcing composites with particulates or long fibres

Term Project: In place of a final exam – which involves:
either A design for an engineering component with operational specifications that make it more advantageous to use a ceramic rather than a metal or plastic
or A literature review of the structure and properties of an advanced ceramic that is essential for producing an innovative engineering component