W26: Physics and Mechanics of Rocks: A Practical Approach

Coordinator(s)	Manika Prasad
Date(s)	Fri, Sep 06
Time	08:45 - 16:45
Location	Crown Perth
Summary	During this one-day short course, I will provide the earth scientist and engineer with the fundamental basis of rock physics to describe the physical processes that govern the response of rocks to external stresses that are essential for reservoir characterization. The course will also offer practical guidance to help better analyze existing data.

Schedule*

The course is organized into two main sections: Section I. Rock Physics Fundamentals (introductory section) and II. Advanced Topics in Rock Physics (application section):

I. **Rock physics fundamentals**: In this section, I will
   a. Review fundamental principles underlying rock physics, and rock properties;
   b. Investigate the effects of fluids on rock properties;
   c. Derive basic rock physics correlations and explain why and how they work
   d. Review rock properties that can be mapped with remote sensing

II. **Advanced Topics in Rock Physics**: In this section, the student is introduced to
   a. Poroelasticity
   b. Attenuation and dispersion,
   c. Geomechanics
   d. Complex electrical conductivity and permeability
   e. Investigate the causes for complications and deviations from basic correlations.
   f. Examine existing empirical and theoretical models,
   g. Discuss selected case studies in rock physics.