Innovation in Materials Teaching

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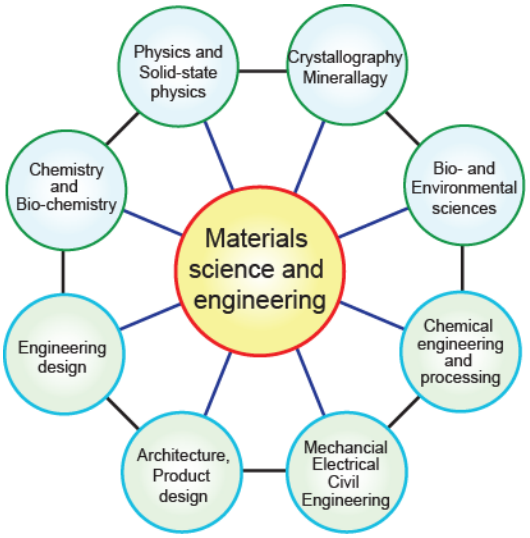
Materials science and engineering sits at the intersection of Physics, Chemistry, Geo and Bio sciences, Environmental science and Engineering. The Materials curriculum at many universities includes some or all of these. This breadth is unusual and makes the subject uniquely well-placed to contribute to the solution of many of today's challenges, particularly



- Building interdisciplinary thinking that bridges the disciplines shown in the figure, an essential ingredient for innovation from cross-fertilization.
- Introducing students to environmental challenges, many derived from material production and use, and which require an approach combining information from several of these disciplines
- Thinking creatively about material needs to meet the changing demands of industry in the next 30 years, and in doing so, linking the science to the engineering
- Innovative solutions for generating low-carbon power.

The talk will explore the evolving history of Materials Science and Engineering, the contributions of information technology to enabling links between the individual disciplines shown in the figure, and the ways in which material science can respond to the emerging environmental challenges.