

tified [7,8]. The concepts covered in this class and the project outline are listed in Table 6.

Finally, a seminar can be used to invite chemical engineers from the composite industries to share their experiences and to introduce the students to various composite industry problems and solutions.

FINAL THOUGHTS

Both the mechanical behavior of composite materials and the effect of processing parameters on the mechanical properties are important areas of composite materials manufacturing and design. Although the mechanics of composites topics are more appropriate in a mechanical engineering curriculum, chemical engineering students might choose to take a strength of materials class where the concepts of anisotropy and mechanical behavior are introduced.

Despite the importance of composite materials and the essential need for engineers knowledgeable in this emerging technology, introducing composite materials topics into the existing curricula should be done without compromising the basic engineering sciences. The principles currently covered should remain intact, but the examples and the application of these principles could be tailored to composite materials.

In order to implement the plan, the department should have faculty members working in the area of composite materials who can bring their experience and expertise to the classroom (our department has five faculty members who work in the polymer/composite materials area). A department looking for a new direction, but without expertise in the field, could retrain faculty who have an interest in this area through short courses, conferences, and industry/government faculty summer internships. Another mechanism for implementation could be through the use of part-time faculty who have extensive experience in the composite materials industry.

CONCLUSIONS

A strategy for introducing composite materials concepts into existing classes has been proposed. Implementing the application of basic chemical engineering principles to composite materials is necessary if we are to meet the demand for chemical engineers knowledgeable in this emerging technology. It is an alternative that can be used in schools where concentrations in the areas of new technologies cannot be introduced. Finally, this approach will not require re-accreditation since classes and the basic principles remain the same; only the examples and the applications would change.

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