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U.S. Department of
Transportation



Project Title: **Online Courses on Biorenewable Resources and on Engineering Sustainability**

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Project Goal

The project goal was to deliver two courses developed to complement graduate and upper-level undergraduate education in biobased resources and sustainability.

The objectives of this project were:

- Deliver an overview course on Biorenewable Resources
- Deliver a course on Engineering Sustainability
- Develop Online Capstone Team Design Experience
- Offer the Capstone Team Design Experience
- Make a graduate certificate in Biobased Products and Biofuels available to non-resident students via distance education

Project Outcomes

- Two courses were developed to complement graduate and upper-level undergraduate education in biobased resources and sustainability: 1) Once focused on an overview of biorenewable resource utilization; 2) The other emphasized quantitative tools to characterize the sustainability of materials and processes.
- The courses were delivered and well received by the students. The courses were delivered both on-campus and via distance education with the material recorded for future asynchronous delivery.
- The sustainability course has been offered as an asynchronous distance elective with KSU's senior chemical engineering students on several occasions .
- A multi-institutional graduate certificate program in Bioenergy and Sustainable Technologies involving Kansas State University, University of Arkansas, Oklahoma State University, and South Dakota State University is underway. Course and program approvals at each campus were completed and the approval process for the graduate certificate at each institution was completed.



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Kansas State University contributed faculty time and fringe benefits. Indirect rates on the faculty time was cost shared by KSU at the federally negotiated rate for research at 48% MTDC.