

## **Wood-Based Composite Science and Technology Online Distance Education Series**

**Course Module:** Strand-based Composite Manufacturing

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Module Description: This course covers the manufacturing of strand-based composites beginning in the forest and continuing through pressing as indicated below. Within each lecture, key variables that affect the quality of the intermediate product, such as a strand, as well as the finished panel product are identified and discussed. Results of scientific studies and a mill trial are presented to support conclusions.

The eight (8) lecture titles are shown below. There are approximately 10 hours of asynchronous online instruction, available during a 13-week period.

1. Introduction
2. Effect of wood species and wood quality
3. Green end, Part 1 – trees, logs, and storage
4. Green end, Part 2 – log preparation, debarking, and stranding
5. Drying, screening, and conveying strands throughout the process
6. Blending – adding adhesive to the strands
7. Mat forming
8. Pressing

Outcomes: After completing this module, the student will understand the underlying science of the manufacturing process and will realize the importance of controlling key variables. This knowledge can be used to solve problems in the mill and can be used in developing new products. By understanding the limitations in her or his situation, the student will be able to establish the boundaries limiting optimization activities.

Learning Assessment: Quizzes are inserted within each lecture and are not graded. A one-hour final examination is required to receive a Certificate of Completion. The course is graded on a pass or fail basis, with a 70% score on the final examination to pass. The exam must be submitted prior to end of the 13-week period.

Certificate of Completion: Students must complete all lectures, quizzes and the final exam to

receive a Certificate of Completion. To request a certificate, students must email the instructor after passing the final exam.

Questions and Comments: Students may contact the instructor about course-related inquiries using the email listed above. For technical questions (e.g., receiving a Certificate of Completion), students should email **workspace@oregonstate.edu**.