

Wood-Based Composite Science and Technology
Online Distance Education Series

Course Module: Wood Adhesion Science & Technology

Instructor:

Chip Frazier

T.M.Brooks Professor of Wood Science

Department of Wood Science & Forest Products

Virginia tech

Email: cfrazier@vt.edu

Course Description:

Introduction to adhesion science and technology with an introduction to basic chemical concepts, surface chemistry, polymer science, polymer analysis, and also to some commercially significant wood adhesives and topics specific to those adhesives.

Course Lectures:

Lecture	Title	Time (min)
1	Introduction to Adhesion	48
2	Chemical Introduction	44
3	Intermolecular forces	48
4	Surface chemistry	51
5	Organic reactivity	26
6	Polymer Analysis	71

7	Polymer Science-I	42
8	Polymer Science-II	42
9	Theories of Adhesion	37
10	Adhesive Strength Development	40
11	Adhesives and Applications	104
12	Wood Factors that Impact Bonding	67
	total	620 (10.3 hrs)

Learning Assessment:

Most lectures contain an ungraded quiz, containing easy questions. A two-hour final examination is required for completion. The final examination contains 75 questions that are more challenging than the quizzes. Course is graded on a pass/fail basis, with 70% score on final examination required to pass. A study guide is provided; it demonstrates the general nature of the final exam questions. The study guide will be provided only after the online lectures have been completed.

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.

Keys to Success:

The online lectures contain visual and audio information. It becomes very easy to “zone-out” and miss important details. The student must plan to break the lectures up into brief 5-10 minute periods, and to allow for intense note-taking. The instructor has purposely included audio information that lacks the corresponding video information. Consequently, the student must engage in active note-taking; this helps avoid the zone-out.

Contacting the Instructor:

Email the instructor as required.

Recommended Reading:

I enjoy Scientific American, and also the Economist.