General WINS Educational Objectives

The WINS program broadly aims to educate professionals who are job-ready and prepared for a career supplemented by lifelong learning. Students who complete the WINS curriculum at OSU will have the following types of general knowledge and specific competencies.

1. **A comprehensive understanding of:**
   - The structure, physical, chemical, and mechanical properties of wood and other plant-based renewable materials important to the Pacific Northwest.
   - The contributions that these materials make to society in the forms of building materials, consumer products, art and design materials, energy and chemicals.

2. **A working knowledge of the technologies, processes, and procedures used for:**
   - Converting wood and other renewable materials into durable and/or aesthetic products.
   - Releasing the energy embodied in renewable materials and putting it to use.
   - Ensuring safe and efficient manufacturing / fabrication / sculptural operations.
   - Characterizing and selecting appropriate materials for specific applications or markets.
   - Comparing environmental impacts of different materials.
   - Developing new applications and markets for renewable materials.
   - Advanced manufacturing processes and settings.

3. **A general familiarity with:**
   - A spectrum of products made from renewable materials that are economically important to the Pacific Northwest including those produced or used in the region, and those representing competition to regional products.
   - How policies and regulations affect the use and manufacture of renewable materials and products in the region.
   - The structure and dynamics of national and global markets for key renewable materials and products.
   - Specific contemporary topics such as green building, energy independence, wooden interiors, or sustainability that affect how society views renewable materials and products.

4. **Skills and abilities to:**
   - Synthesize information to solve problems and think critically.
   - Work successfully in a professional environment.
   - Utilize computational methods and use specific computer applications.
   - Demonstrate strong written and verbal communication skills.
   - Appreciate conflicting interests and values.
   - Perform selected laboratory and workshop techniques.
   - Manage workgroups, including those with people of diverse backgrounds.

5. **Practical work experience:**
   - Students are required to complete 6 months of work experience related to their major which allows them to better understand the nature of the field.