

HBSc Biomaterials

Graduates of the HBSc Biomaterials program will be able to:	
1.	describe the physical, chemical, anatomical, and mechanical properties of different types of wood and forest products.
2.	Demonstrate understanding of the respectful, efficient, and sustainable use of forest resources in modern materials science, design, manufacturing, and construction; encompassing a variety of forest products and biomaterials.
3.	explain the history of forest biomaterials industry, and contemporary trends and challenges.
4.	recognize and demonstrate appreciation of the social science perspectives on forest resource uses, including policy frameworks, views of different stakeholders, and aboriginal perspectives and rights.
5.	give examples of forest product waste streams, environmental impacts of forest biomaterials industries, and measures to mitigate these impacts.
6.	comprehend, make critical assessment of, and apply technical information from scientific literature, government, and non-governmental sources - to forest resources and biomaterials.
7.	describe the steps taken to perform a life cycle analysis of forest products and understand the results.
8.	apply biology, chemistry, economics, statistics, mathematical principals, material science, building science and engineering principles, to problems arising in development of new products/materials, production, and sustainable utilization of forest resources .
9.	select and apply qualitative and quantitative tools and approaches to evaluate wood and other bio-based materials for their suitability in varied applications.
10.	devise and execute a research project following the scientific method: form a hypothesis, gather data, and interpret that data to form conclusions.
11.	prepare reports containing technical writing, data analysis, graphs, and graphics to effectively convey information.
12.	clearly articulate recommendations and rationale for forest resource applications, to decision-makers and non-forestry professionals.
13.	demonstrate awareness of global differences in culture, geography, industry and politics, and professional practice, and describe some possible outcomes of transferring policy or practice from one industry or geographical location, to another.
14.	employ respectful modes of communication and demonstrate recognition of the expertise of other professionals.
15.	describe the role of the Professional Forester, the training and legal requirements for practicing forestry and the importance of collaboration to produce high quality forestry products.
16.	identify the typical skillsets and knowledge held by other allied professionals (architects, engineers, ecologists, economists, etc.).