

Bachelor of Science

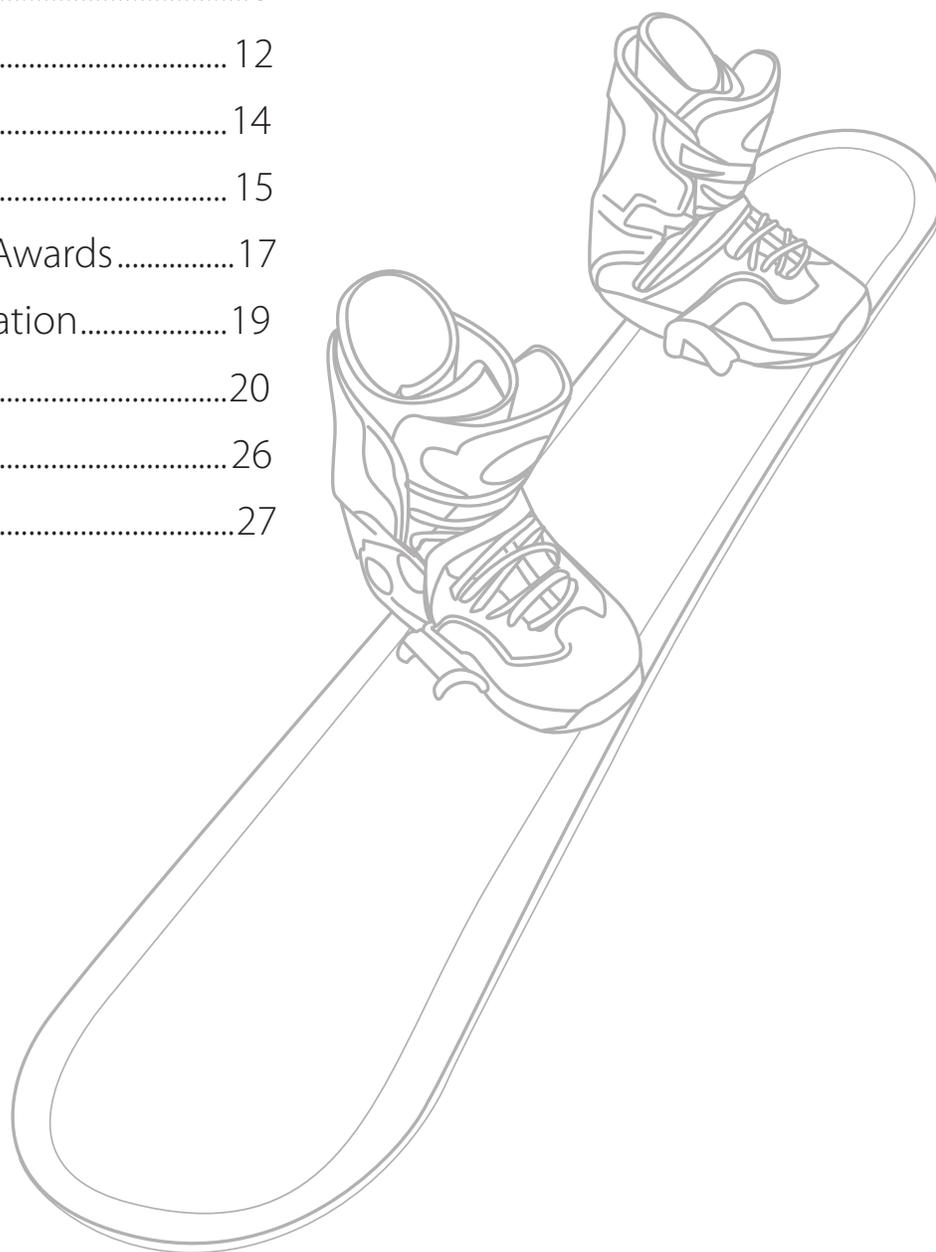
wood products
processing



the **fusion** of science,
engineering and business

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Experience more in the B.Sc. Wood Products Processing Program

More opportunities

- Pursue an interdisciplinary degree and explore science, engineering and business.
- Take advantage of the co-op option and Minor in Commerce.
- Be highly sought after and secure management positions with excellent starting salaries and opportunities for advancement.
- Discover diverse career options in the wood products sector and related fields.

More support

- Study at Canada's national centre of excellence for wood products.
- Benefit from smaller class sizes with more individual attention, creating a dynamic and interactive environment.
- Friendly, dedicated staff and faculty members are available to support students' academic and professional success.
- Develop contacts and mentors through employer events and networking opportunities.

More fun

- Join a group of like-minded peers and develop life-long friendships.
- Participate in faculty and intramural sports, social functions and community events.



Introduction

Canada's wood products sector ranges from the lumber and engineered wood products used to construct our homes and other buildings, to the decorative and functional finishing materials used in those buildings, to the cabinets and furniture that fill their rooms.

In an increasingly global marketplace, the sector must produce competitive, quality products and services. Its future prosperity depends upon the continued development of new products and technologies and most importantly, the education of a highly knowledgeable and skilled workforce.

The B.Sc. Wood Products Processing program was developed in direct response to the need for university graduates qualified to become the leaders of tomorrow in this sector. The extensive facilities of the Centre for Advanced Wood Processing – Canada's national centre of excellence for wood products – support the delivery of this unique program by UBC's Department of Wood Science.



"The Wood Products Processing program is the most dynamic, marketable and professional education available. It provides a solid education in wood science, engineering and business. With these types of skills, you are free to choose from the most successful of careers, in any industry.

As a graduate now working in the industry, I can testify that this degree is very competitive with similar education in Engineering, Sciences, and Business. I have had the luxury of choosing from several professional positions in various aspects of the wood related industries. First job after graduation – setting up a factory in Asia, for furniture giant Palliser – was a great opportunity. Now I am with NASCOR INC., based out of Calgary, Alberta; helping to manage NASCOR's pre-fab housing manufacturers, located across the globe."

*Tom Sweatman, B.Sc.
(Wood Products Processing)
Licensing, NASCOR INC.*

The Degree

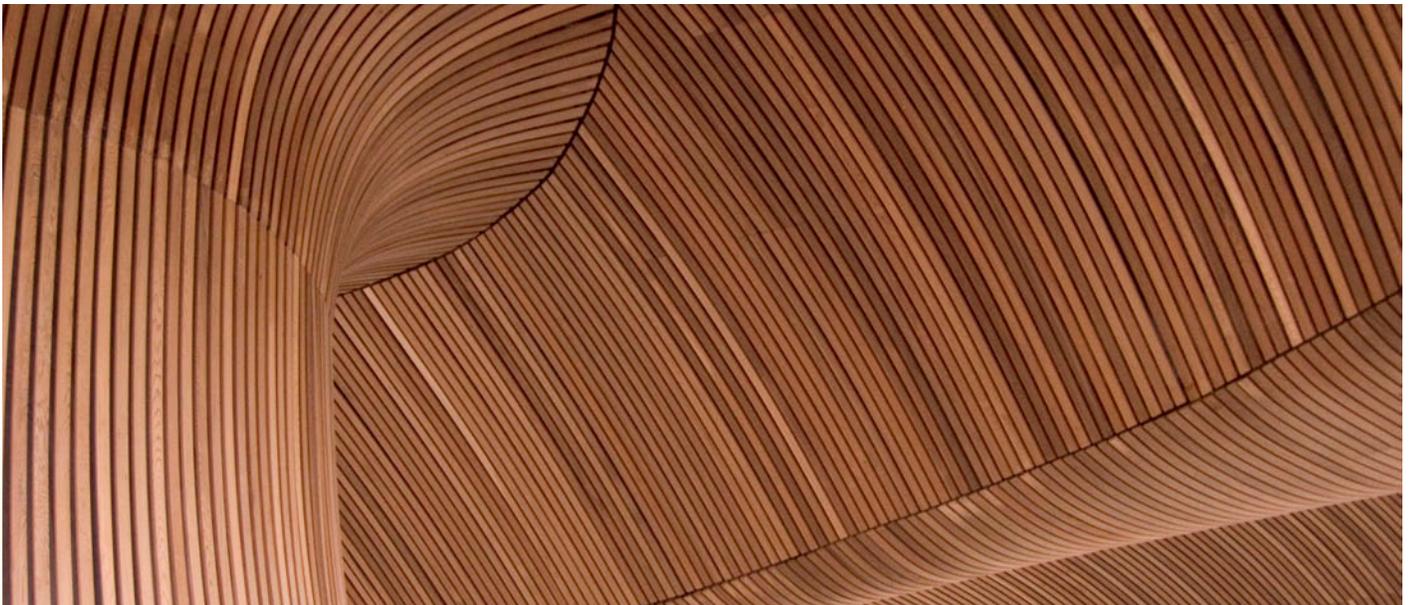
This award-winning program is a fusion of science, engineering and business that prepares graduates for careers in the wood products sector and related fields. Students develop a comprehensive understanding of wood science, business and advanced manufacturing operations. They can also choose to complement their science degree with a Minor in Commerce. Co-op is another exciting option taken by most students to integrate career-related experience into their academic studies.

The program is offered as a four-year non co-op option and as a five-year co-op option. The first year is similar to other university science or engineering programs. Students take mathematics, physics, chemistry, English, an introductory wood industry course and two general electives. This set of courses allows students to complete their first year at most post-secondary institutions in Canada and abroad.

Emphasis in second year is to develop a fundamental knowledge of the material science of wood (biology, chemistry, mechanics and physics). Microeconomics, statistics, communications and an introduction to primary and secondary wood industry processing technologies are also covered in this year. The second year ends with a three-week wood machining skills course, with an emphasis on workplace safety, teamwork and the use of state-of-the-art wood processing equipment. In the co-op option, the first work term follows the end of second year.

"I work for a high-end, high-design furniture retailer. My role is to source vendors around the world to build proprietary designs for the company's 50+ stores, and work as the link between the designers, product development, and the factories. I mainly work in Italy and Eastern Europe, but also Asia and Brazil. I am thrilled as this is absolutely my dream job and I feel incredibly fortunate. Without a doubt, my Wood Products Processing degree was a large factor that helped me land the job, and I just want to say thank you again for providing me with such a valuable and recognized education that has led to such a fantastic opportunity – thank you!"

Richard Trory, B.Sc.
(Wood Products Processing)
Head of Production, Engineering, and
International Sourcing,
Design Within Reach



In the first term of third year, students focus on knowledge concerning basic manufacturing. They complete courses in machine components, industrial engineering, quality improvement, applied mechanics and computer applications. Students are then eligible to leave campus for one eight-month or two four-month co-op work terms.

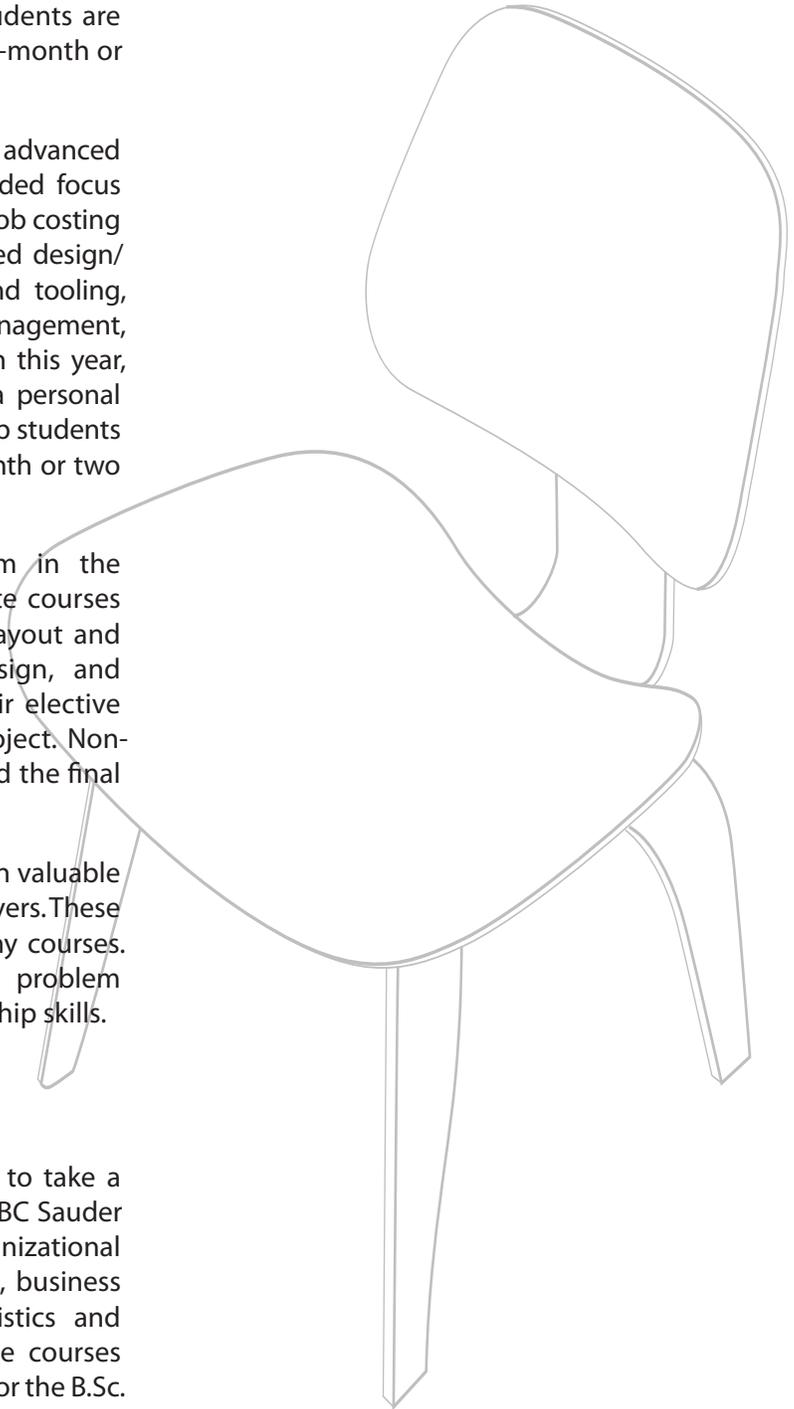
In the fourth year, the focus shifts to advanced manufacturing and operations with an added focus on business management. Courses include job costing and engineering economics, computer-aided design/computer-aided manufacturing, cutting and tooling, furniture construction, operations management, and wood products finishing operations. In this year, students select senior electives that give a personal focus to their studies. After fourth year, co-op students are again eligible to complete an eight-month or two four-month co-op work terms.

Co-op students return to the classroom in the second term of their fifth year to complete courses in globalization and sustainability, plant layout and design, environmental and facilities design, and glued wood products. They complete their elective courses and a major industry-oriented project. Non-co-op students complete these courses and the final project in their fourth year.

Throughout the program students also learn valuable workplace skills that are important to employers. These skills are embedded in the content of many courses. This skill-set includes: trouble shooting, problem solving, teamwork, communication, leadership skills.

Minor in Commerce

Students interested in business can apply to take a Minor in Commerce, offered through the UBC Sauder School of Business. Courses include organizational behaviour, financial accounting, marketing, business finance, strategic management, and logistics and operations management. These Commerce courses also meet the senior elective requirements for the B.Sc. Wood Products Processing program.



Winner of the 2002 Yves Landry Foundation Award for the most innovative Canadian University-level manufacturing technology program and the 2003-04 Alfred Scow Award for Outstanding Contributions to the Student Experience and Learning Environment at UBC.

Academic Overview

Four-Year Non Co-op Option

Those students not enrolled in the five-year Co-op program complete their academic course work in four years.

	Term 1 Sep – Dec	Term 2 Jan – Apr	Summer May – Aug
Year 1	Basic Sciences		Summer
Year 2	Wood and Material Sciences		Wood Machining Skills Summer
Year 3	Manufacturing Basics	Advanced Manufacturing	Summer
Year 4	Advanced Manufacturing	Integration	

Five-Year Co-op Option

	Term 1 Sep – Dec	Term 2 Jan – Apr	Summer May – Aug
Year 1	Basic Sciences		Summer
Year 2	Wood and Material Sciences		Wood Machining Skills Co-op 1
Year 3	Manufacturing Basics	Co-op 2	Co-op 3
Year 4	Advanced Manufacturing		Co-op 4
Year 5	Co-op 5	Integration	

“The variety of classes and work experience I had in wood products was unlike the vast majority of what I saw from other faculties while I was at UBC. It really did prepare me for what was coming after graduation. Just having a degree does not mean very much in today’s work world, but having work experience, references and communication skills makes you desirable in any line of work, including further education like medicine or law. If given the choice again after high school, I would repeat my wood products processing degree without a second thought. My advice is to pack as much as you can into your days at school. Volunteer and try everything, because it can be amazingly little what will separate you from the next applicant.”

Kevin Tyler, B.Sc.
(Wood Products Processing)
UBC Medical Student Graduate

Co-op Education

What is Co-op?

Co-op (short for cooperative education) is offered to students in the B.Sc. Wood Products Processing program. Co-op is the integration of up to 20 months of practical work experience into a student's academic studies. A Co-op Coordinator works with employers across Canada and around the world to carefully develop challenging, career-related positions. Students then participate in a competitive application and interview process to secure a work term of four or eight months.

Co-op students also attend a series of employability skills workshops that teach resume writing, interviewing skills and techniques to deal with common workplace issues. During the work terms, students are supervised, evaluated, and paid by their employer. Each co-op position is considered an important addition to a student's professional development. We therefore strongly recommend students complete the co-op option.

Are students paid?

Yes! Co-op students are typically paid anywhere from \$10.00 to \$25.00 per hour (2008–10), depending on experience, employer and location. This gives students a chance to start paying for their education right away. Students who complete all five co-op terms can average total earnings of over \$60,000 by the time they graduate from the program.

For more information, please contact:

Phone: 604 822 4793

Email: wood.co-op@ubc.ca

Web: www.forestry.ubc.ca/co-op

How do students qualify for Co-op?

Students apply for the co-op option in term one in the second year of their degree. To participate, a student must complete a co-op application, have a competitive GPA and a successful interview with the Co-op Coordinator.

Students must maintain a competitive GPA and complete all required courses to qualify for advancement into the intermediate and senior co-op work terms. Students are also required to pay tuition for initial pre-employment workshops and each four-month work term.

Advantages of Co-op

- Explore career options and interests through a variety of work experiences
- Apply classroom material to work situations
- Network with employers and mentors
- Earn while learning
- Enhance career prospects
- Gain valuable career-related experience nationally and internationally



Co-op students travel across Canada and around the world for their co-op work terms!

Here's what some of them have done ...

AUSTRALIA

GUNNS TIMBER PRODUCTS

Implement new downtime recording system in planer mill; train staff on how to use software; improve grade recover; analyze kiln operation and drying efficiency.

CANADA

ASPENWARE

Lumby, BC

Assist with production planning and industrial engineering activities. Prepare report for a Community Futures Development Corporation Loan.

AINSWORTH LUMBER COMPANY, INC.

100 Mile House, BC

Assist in oriented strand board (OSB) related research and development projects, including testing, analyzing, and documentation.

AYA KITCHENS AND BATH

Mississauga, ON

Work with the quality control and engineering managers on production analysis, continuous improvement, and material usage projects.

CANFOR WOOD PRODUCTS MARKETING

Vancouver, BC

Assist North American and off-shore sales divisions with sales, customer service and reload inventory reconciliation as well as several marketing and market research initiatives.

CARMANAH DESIGN & MANUFACTURING

Delta, BC

Support engineering and R&D activities by having responsibility for the safe and efficient operation of the Engineering Laboratory. Help design and conduct experiments, collect and analyze data, and prepare reports.

CRAFTSMAN PANEL CUTTERS

Delta, BC

Establish 5S program at machine centres; conduct needs analysis, documentation, and periodic assessments. Update safety protocols and work procedure handbooks.

DECOR CABINETS

Morden, MB

Assist in industrial engineering improvement projects including Theory of Constraints, Lean Manufacturing, and Quality Control. Participate in training and team building initiatives for the plant floor.

GOODFELLOW

Delson, QC

Assist product manager to track wood on trucks, rail cars, and in the yard. Track sources of losses or down graded material. Assist in buying process.

INTERNATIONAL FOREST PRODUCTS

Delta, BC

Assist in the development of a preventative maintenance program. Participate in the development and implementation of continuous improvement programs.



INTERNATIONAL WOOD PRODUCTS GROUP
Vancouver, BC
Conduct research and write articles for publications and consulting projects.

LOEWEN WINDOWS
Steinbach, MB
Work with Demand Flow Manufacturing team to implement flow manufacturing, including production data collection and analysis, manufacturing line design and implementation, technician training, and post implementation product line support.

NIENKAMPER
Toronto, ON
Develop and implement system of scheduled preventative maintenance.

STACK-A-SHELF
Cambridge, ON
Work on small engineering projects: plan layouts for floor plans and machine layouts; define production processes; and improve efficiency in production processes and product flow. Work on small scale project management: project implementation, project realization, and project documentation.

STRUCTURLAM
Penticton, BC
Assist with developing a marketing program targeting architects and engineers. Conduct feasibility study of stocking program targeting distribution network.

SUPERIOR MILLWORK
Saskatoon, SK
Work with the Engineering and Manufacturing groups on projects designed to improve plant layout and capacity.

SUREWOOD FOREST PRODUCTS
Surrey, BC
Sales representative responsible for maintaining key account; deliver training sessions to provide staff with product knowledge; and assist with research of new markets and products and developing strategies to expand sales.

TEAK MARINE
Surrey, BC
Conduct feasibility study for new equipment; research options for unusable wood; and update safety procedures.

TOLKO
Quesnel, BC
Monitor quality standards for products produced in the sawmill. Maintain records of quality and grade standards.

UNISON WINDOWS
North Vancouver, BC
Analyze information and documentation flow from sales through to production and delivery to customer.

VICEROY HOMES
Richmond, BC
Develop procedures, methods, and work instructions. Assist with evaluation of production flow to determine areas for improvement. Participate in training and team initiatives for the plant floor.

"When I graduated, I was offered a job at Weldwood as a Business Analyst. When my job was first posted, Weldwood was looking for an MBA with 5-10 years industry experience. After interviewing several MBAs and me, they decided that I was best qualified for the position. I interpret this to mean that a WPP Co-op degree with a Minor in Commerce is equivalent to or better than an MBA with 5-10 years experience!"

Dave Muter, B.Sc.
(Wood Products Processing)
Technical Analyst, Tembec Inc.

CHINA

TRIANGLE KITCHEN

Penglai, Shandong

Assist with initial set up of kitchen cabinet production line; use AutoCAD for designing kitchen floor plans; and software testing of CNC programs.

GUATEMALA

LIGNUM

Guatemala, Central America

Assist with implementation of an Enterprise Resource Planning (ERP) system at the sawmill/manufacturing plant.

JAPAN

KEY TEC CO., LTD.

Tokyo

Assist with introduction of engineered wood products to Japanese market; research new trends in home building, both in Japan and in North America; and write reports on building materials and future industry outlooks.

SOUTH AFRICA

UNIVERSITY OF STELLENBOSCH

Stellenbosch, Western Cape

Assist with curriculum development for new degree program in Wood Products Science; field work and case study creation to determine best practices in local industry; serve as a teaching assistant in wood science-related courses.

SWITZERLAND

BERNE UNIVERSITY OF APPLIED SCIENCE

Biel-Bienne

Research and development projects focused on:
1. the formulation and testing of new tannin based acoustic panel; and 2. testing the influence of temperature on tannin resin leach-ability.

USA

POYRY FOREST INDUSTRY CONSULTING INC.

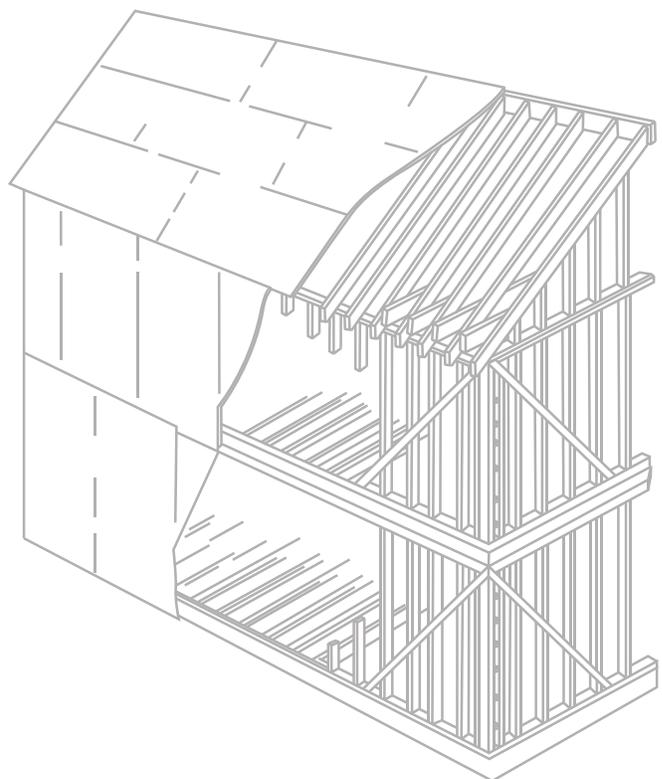
Tarrytown, NY

Maintained global North American wood products database; assisted in all areas of client projects including; strategy, material sourcing, market studies, merger & acquisition valuation, and timberland valuation for clients in the markets of lumber, bio-energy, panel, and value-added products.

WEYERHAEUSER

Federal Way, WA

Assist with marketing and research projects. Learn about the process of export sales, the Asian market for North American wood products, and the process involved in hardwood manufacturing.



Careers

Canada's wood products sector demands high quality, innovative and technologically sophisticated professionals.

Canada's wood products sector is changing; it is continuously developing sophisticated technology, resulting in advanced materials and new products that are in demand worldwide. Today's companies engage in:

- manufacturing a diverse range of wood products (e.g., furniture, cabinetry and building components)
- making products that improve the natural properties of wood (e.g., engineered wood and composite products)
- producing and treating lumber

Canadian wood product companies range from very small businesses to large multinational firms. Lumber tends to be produced by large firms, located close to the forest resource, whereas higher value-added products tend to be manufactured in small to medium-sized establishments in urban centres.

The B.Sc. Wood Products Processing program prepares graduates for careers in the wood products sector and they are highly sought after by employers. Graduates have secured entry-level and middle management positions with excellent starting salaries and opportunities for advancement. The program's interdisciplinary nature allows graduates to pursue careers in areas such as material science, engineering, computer science, material processing, wood finishing, product design, quality control, sales and marketing. Graduates have also pursued post-graduate studies in wood science, finance & business, building construction technology and medicine.

Graduate positions include:

- **Business Analyst:** Financial and operation benchmarking, evaluating potential acquisitions, market assessments and assisting in the preparation of a 5-year strategic plan.
- **Design Engineer or Project Engineer:** Conduct, plan and coordinate various engineering projects designed to improve plant and administrative operating performance, and achieve better quality, lower costs and reduce waste and delays in the manufacturing process.
- **Production Manager:** Purchase planning, dry kiln planning, inventory management, and finished product production forecasting. Maximize profit by optimizing raw material prices versus grade mix. Optimize recovery through raw material management and process control. Oversee quality by establishing clear quality definitions and monitoring raw material quality results.
- **Process Control Analyst:** Cost analysis, production scheduling, CNC machine programming, AutoCAD drafting, new machinery purchase analysis, inventory maintenance and order processing.
- **Product Developer:** Design products, implement quality standards, design cost model, program machine centres, plan production schedules, ensure products meet industry standards, troubleshoot any design and manufacturing problems, design marketing materials and customer liaison.

- **Production and Export Coordinator:** Manage lumber value-added facility, programs and workers. Coordinate shipments and exports of lumber orders to the U.S., Japan, Australia and Europe.
- **Technical Sales Representative:** Investigate and set up a new product line for the company by coordinating and managing the whole process, from sourcing supply from the mills to processing the wood to selling to local and overseas customers.
- **Quality Control Supervisor:** Develop and maintain the quality control program within the manufacturing process. Participate in the identification, development and certification of new products.

Choose your future!

- 34% of program graduates received employment offers before graduation.
- Another 30% found permanent jobs within a month of completing their degree.
- Program graduates average starting salaries of \$50,000 per year. This can rise to over \$80,000 per year with a few years' experience.
- On average, program graduates earn 37% more than the average university graduate with a Bachelor of Science degree.
- Over one-third of the program's graduates leave school with no debt.
- Just over half of the program's graduates work in BC, with 33% in the rest of Canada and 15% working internationally.

Source: 2004 Alumni Survey



"The Wood Products Processing program was an incredible opportunity that provided me with the skills to take a losing furniture company in East Los Angeles and turn it into a profitable business with much potential for future growth and prosperity. I am also my own boss!"

Doug Westlund, B.Sc.
(Wood Products Processing)
Manager, Nordwins Corporation

Student Life

Because not all learning goes on in lecture halls, UBC offers an enormous number and variety of student-run clubs, intramural sports, fitness facilities and varsity athletics.

Forestry Undergraduate Society

The Forestry Undergraduate Society (FUS) is the student government representative of the Faculty of Forestry students. As a part of the UBC student government (known as the Alma Mater Society of UBC), the FUS is made up of over twenty student-elected members from all year levels and degree programs across the Faculty. The FUS is responsible for all official student social and recreational activities within the Faculty, as well as liaising between the Faculty and the undergraduate student population. The society organizes two big social events each year: 'Undercut' in the fall and 'Coconut' in the spring. It runs a variety of events during Forestry Week (usually the third week of September), organizes numerous intramural sports teams and hosts monthly social functions for the students and staff.

For more information about student life in the Faculty of Forestry, please visit: www.forestry.ubc.ca/Students/Undergraduate/Prospective/StudentLife/WhatIsItLike/tabid/668/Default.aspx.



"Joining the WPP program was one of the best decisions I have made since coming to UBC. It offers a practical and widely applicable degree that has very promising career prospects, both within and outside the wood industry. As well, it is delivered by a student-orientated faculty which is second to none, making it a truly exceptional program"

AJ Mackenzie, B.Sc.
(Wood Products Processing)
Weldwood of Canada



Admissions

The Faculty of Forestry welcomes applications from strong students interested in the B.Sc. Wood Products Processing program. Students may apply:

- Directly from high school;
- As a transfer student from college or university; or
- After completion of a two-year diploma.

Students Applying Directly From Secondary School

Students who apply directly from secondary school must meet specific entrance requirements. They must complete the following high school courses and satisfy the minimum average for admission to the B.Sc. Wood Products Processing program. The minimum average is set annually and students are therefore encouraged to achieve the highest average possible.

Your average is calculated on the following Grade 12 courses or IB/AP equivalents¹:

- English 12
- Principles of Mathematics 12²
- One of Physics 12, Chemistry 12 or Biology 12
- One other approved examinable Grade 12 course³

These additional courses are required but are not used to calculate your average¹:

- English 11
- A Grade 11 language⁴
- Principles of Mathematics 11
- Chemistry 11
- Physics 11
- One of Social Studies 11, Civics Studies 11, IB Geography or IB History

First-year Credit for Advanced Placement (AP) Courses

UBC will grant credit to students who achieve a grade of 4 or better on approved AP courses. Students can choose to apply first-year credit to the B.Sc. Wood Products Processing program or take the course again. More information is available at: <https://you.ubc.ca/ubc/vancouver/ap.ezc#fyc>

First-year Credit for International Baccalaureate (IB) Courses

UBC will grant credit to students for IB higher-level courses with a final grade of 5 or higher (arts courses) and 6 or higher (science courses). Credit is also awarded for Theory of Knowledge with an A or B. Students can choose to apply first-year credit to the B.Sc. Wood Products Processing program or take the course again. Full details are available at: <https://you.ubc.ca/ubc/vancouver/ib.ezc#fyc>.

1 These are only the courses required for applicants following the BC/Yukon secondary school curriculum. High school students following other curricula should refer to the course requirements online at <https://you.ubc.ca/ubc/vancouver/admissions.ezc>, and contact us for more details.

2 A score of 67% or higher in Principles of Mathematics 12 is required to register in first-year math at UBC, otherwise UBC Math 002 will also be required.

3 Information on appropriate academic courses is available online at <https://you.ubc.ca/ubc/vancouver/bchsr.ezc>.

4 Information on approved language courses and possible exemption from the Grade 11 language course requirement is available online at <https://you.ubc.ca/ubc/vancouver/bchsr.ezc#gr11c>.

Students Applying from a College or University

Students transferring from a post-secondary institution are expected to have successfully completed a minimum of 24 credits before applying to UBC. Students with 24 credits or more will have their admission average based on their post-secondary studies. The minimum standing to qualify for admission to UBC is a "C" average (60% where 50% is a passing grade) or a GPA of 2.0 on all university courses attempted, including failures and repeated courses. In the case of applicants with more than 30 credits of prior study, the admission average is calculated on the basis of the last 30 credits completed. The minimum average is set annually and students are therefore encouraged to achieve the highest average possible. Students must also have successfully completed the secondary school prerequisites noted on page 15 or equivalents (although the marks for these courses will not be considered).

Students with less than 24 credits will be evaluated on both their final secondary school grades and post-secondary grades. They will have to meet both the secondary school minimum average for admission and the post-secondary minimum average for admission. Students must also have successfully completed the secondary school prerequisites noted on page 15 or equivalents.

Transfer Credits

Courses successfully completed at recognised institutions in British Columbia and the Yukon are granted transfer credits in accordance with the BC Transfer Guide at www.bctransferguide.ca. Courses completed elsewhere are assessed for transfer credit on a course-by-course basis. Where appropriate, transfer credit can be applied towards the course requirements of the B.Sc. Wood Products Processing program.

You can apply to UBC online at:
<https://you.ubc.ca/ubc/vancouver/>

Students Applying After Completion of a Two-Year Wood Products or Engineering Tech Diploma

Students applying from a technical institute must have a conferred two-year diploma with a minimum average of 65 per cent. These students must also meet the secondary school requirements outlined on page 15. Such students will be considered for admission and possible advanced standing on an individual basis. Transfer of credit or exemptions for specific courses may be given on an individual basis or based on existing agreements between the technical institution and UBC.

English Language Requirements

All prospective students must demonstrate their competency in English before being admitted to UBC. You can satisfy this requirement in a number of ways. Details are available online at: <https://you.ubc.ca/ubc/vancouver/elas.ezc>.

All UBC undergraduate students must also complete first-year English courses as part of their degree. In order to take first-year English courses at UBC, students must write the Language Proficiency Index (LPI) exam and achieve at least level 5 (30/40) on the essay section unless they qualify for an exemption. For more information about English and the LPI, visit: www.english.ubc.ca/ugrad/1styear/.

Scholarships and Awards

UBC offers a wide range of other programs to recognize students with high academic achievement and provide financial assistance to those who cannot meet basic educational costs. The Student Financial Assistance and Awards office administers awards for academic achievement and financial need.

For more information, please contact:

UBC Student Financial Assistance and Awards
Brock Hall, 1036 – 1874 East Mall
Vancouver, BC V6T 1Z1
Phone: 604 822 5111
Fax: 604 822 6929
Email: awards.enquiry@ubc.ca
Web: <http://students.ubc.ca/finance/>

The Faculty of Forestry also plays an active role in raising funds for scholarships and awards as part of its commitment to making education accessible to everyone. Awards and scholarships are available to students entering or registered in the B.Sc. Wood Products Processing program. Students enrolled in the co-op option are also eligible.

Entrance Scholarships are based on students' admission average as per the four Grade 12 courses noted on page 15 (or the equivalents). A student must attain a minimum average of 80 per cent to be considered for a scholarship. Students are automatically considered for a number of scholarships and awards, both general to UBC and those specific to the Faculty of Forestry – students do not need to submit applications for these scholarships. However, other scholarships may be available, and students are encouraged to contact the Student Financial Assistance and Awards office.

Entrance Awards are available to new students entering the program based on wood-related work experience, practical skills and non-academic achievement. These awards are given in recognition of students' participation in the wood products sector and the community as well as extracurricular activities and personal qualities. Students wishing to apply for these awards must submit an application package to the Wood Products Processing Scholarship Committee (see page 18 for details).

Scholarships, Prizes and Awards are awarded to top-ranking students for academic achievement in all years of the program. To be eligible, a student must be standing in the top 10 per cent of his/her year, or have an average of 75 per cent or higher (with no failed courses). Prizes or other academic awards that are based on performance in a specific course require that the student stand in the top 10 per cent of students registered in the course, or obtain an average of 75 per cent or higher for the course in question.

Introduction to Wood Products Industry Award is offered to students who excel in Wood 120.

Canadian Woodworking Machinery Distributors Association Prize (WOOD 305) is presented to the top student(s) in the Wood Machining Skills course.

Bursaries are non-repayable awards that are allocated primarily on the basis of financial need. Any student with assessed financial need can apply for a bursary, but primary consideration is given to those who have also applied for government assistance.

"Congratulations! You are in one of the best programs at UBC, and you should be proud of yourself. This program may be a little longer (and tougher in some ways) compared to others but you will soon find out it's worth the effort. While the professors and instructors from the industry offer you world-class solid academic foundation, the co-op program gives you the excellent chance to approach the real world with what you have learned, and feel how it really is at the work place"

Kenny Yiu, M.B.A., B.Sc.
(Wood Products Processing)
Investment Analyst, AIF Capital Limited

Entrance Award Criteria

The wood products sector created Entrance Awards to attract students, with an ability in woodworking and leadership, to the program; employers are looking to hire these team players. Eligibility for Entrance Awards is based on hands-on experience working with wood and work experience in the sector as well as other volunteer and community activities.

Criteria for the Entrance Awards include:

- paid or volunteer work experience in the wood products sector
- high school woodworking courses and projects
- woodworking hobbies or volunteer work

Assets to your application

- volunteer work in the community (e.g. at a hospital or community centre, with children or the elderly, in girl guides or boy scouts and other related activities)
- extra-curricular activities in school such as student council, club leader, sporting team captain or yearbook

Students wishing to apply for these awards must submit an application package to the Wood Products Processing Scholarship Committee. Your application package should have a cover letter explaining why you are interested in working in the wood products sector and why you would be a good candidate for the award. The main application can be similar to a résumé, listing all your qualifying activities. You might include photographs or photocopies of your work, letters of reference and other supporting documentation. Presentation is important but please remember that it is no substitute for content!

Applications must be submitted by August 1st of each year to:

Wood Products Processing Scholarship
Committee
c/o Program Director
Wood Products Processing Program
Faculty of Forestry
University of British Columbia
2900 – 2424 Main Mall
Vancouver, BC V6T 1Z4

“The Wood Products Processing co-op education and academic curriculum provided me with a diverse set of skills that allowed me to hit the ground running upon graduation. A broad skills base prepares graduates to take on a wide variety of projects and positions within the primary and secondary wood products industry. I am very pleased with the opportunities that have been opened up to me since graduating from the WPP program and I haven’t looked back.”

Shane Harsch, B.Sc.
(Wood Products Processing)
Account Executive – Offshore sales, Canfor

Additional Information

Fees

The cost of first year at UBC is a combination of school costs and living costs. As a guide, students can expect to pay:

- \$4,400 and up for 2010-11 (domestic) tuition fees
- \$1,700 and up for student fees and books
- \$3,000 to 10,000 or more for living expenses (depending on whether you live at home or not)

Detailed information on fees, expenses and ways to finance your education are available online at <https://you.ubc.ca/ubc/vancouver/finances.ezc>

On-campus Housing

Living on-campus is an amazing experience. Though space is at a premium, first-year students from outside the Greater Vancouver area are given the highest priority. First-year students are usually assigned to the Totem Park or Place Vanier residences. Both offer shared rooms, singles and rooms for students with disabilities. All rooms are equipped with high-speed Internet access plus basic furnishings. Meal plans are mandatory at both residences; however, there are options to suit many tastes and diets.

Students are strongly advised to apply online for residence immediately after applying for admission to UBC – do not wait until you are admitted.

For more information, please contact:

UBC Housing and Conferences
Brock Hall, 1036 – 1874 East Mall
Vancouver, BC V6T 1Z1
Phone: 604 822 2811
Fax: 604 822 6935
Email: information@housing.ubc.ca
Web: www.housing.ubc.ca

Student Services Centre

Once you have applied and received your UBC student number, you may obtain information on the status of your application by visiting the online Student Service Centre (SSC) at: <http://students.ubc.ca/ssc>.

You can also apply for Student Housing, check to see if transcripts and payments have been received, register for courses, and manage your contact information via the SSC.

Courses

All courses are subject to change. Please consult the UBC calendar for the most current info.
<http://students.ubc.ca/calendar/>

Year 1

CHEM 111 (4) Principles of Chemistry I (Term 1)

Stoichiometry, atomic and molecular structure, chemical periodicity, descriptive inorganic chemistry.

Prerequisite: Not open to students with credit for CHEM 12.

or

CHEM 121 (4) Structural Chemistry, with Application to Chemistry of the Elements (Term 1)

Fundamentals of structural chemistry; descriptive chemistry of main-group elements, with industrial and environmental applications. This is a required course for all students needing a first-year Chemistry course who have CHEM 12.

** If you did not complete Chemistry 12, please register for CHEM 111 instead of CHEM 121*

CHEM 113 (4) Principles of Chemistry II (Term 2)

General and ionic equilibrium, solubility, thermodynamics. Introductory organic chemistry: stereochemistry; substitution, elimination and oxidation-reduction reactions. Not open to students with credit for CHEM 12 or CHEM 121. Can be used as prerequisite to subsequent CHEM courses.

Prerequisite: CHEM 111.

or

CHEM 123 (4) Physical and Organic Chemistry (Term 2)

Principles of equilibrium and chemical thermodynamics. Introductory organic chemistry: stereochemistry; substitution, elimination and oxidation-reduction reactions. This course or CHEM 113 is prerequisite to all subsequent courses in chemistry.

Prerequisite: CHEM 121.

** If you did not complete Chemistry 12 please register yourself for CHEM 113 instead of CHEM 123.*

ENGL 110 (3) Approaches to Literature (Term 1 or 2)

Study of selected examples of poetry, fiction, and drama. Essays are required.

or

ENGL 111 (3) Approaches to Non-fictional Prose (Term 1 or 2)

Study of a selection of prose texts ranging in length from the essay to the book, with emphasis on writing of the twentieth century. Essays are required.

or

ENGL 112 (3) Strategies for University Writing (Term 1 or 2)

Study and application of the principles of university-level discourse, with emphasis on expository and persuasive writing. Essays and exercises are required.

PHYS 101 (3) Energy and Waves (Term 1 or 2)

Conservation laws, rotational motion, simple harmonic motion, sound, fluids, heat, including biological applications.

Prerequisite: One of PHYS 12, PHYS 100.

Corequisite: One of MATH 100, MATH 102, MATH 104, MATH 120, MATH 180, MATH 184.

WOOD 120 (3) Introduction to Wood Products and Forest Management (Term 1)

Introduction to forestry, wood products industry, processes, products, markets and forest policy issues affecting the wood industry. Not available for credit to students in the B.S.F. degree.

General Electives (9)

* Students without Physics 12 must replace 3 credits of electives with PHYS 100 prior to taking PHYS 101

MATH 100 (3) Differential Calculus with Applications to Physical Sciences and Engineering (Term 1)

Derivatives of elementary functions. Applications and modelling: graphing, optimization.

or

MATH 102 (3) Differential Calculus with applications to Life Sciences (Term 1)

Functions, derivatives, optimization, growth and decay, oscillations and series.

or

MATH 104 (3) Differential Calculus with Applications to Commerce and Social Sciences (Term 1)

Derivatives and rates of change, exponential and trigonometric functions, Newton's method, Taylor series, maxima and minima, and graphing.

or

MATH 180 (4) Differential Calculus with Physical Applications (Term 1)

Topics as for Math 100; intended for students with no previous knowledge of Calculus. Not for credit for students with High School Calculus.

or

MATH 184 (4) Differential Calculus for Social Science and Commerce (Term 1)

Topics as for Math 104; intended for students with no previous knowledge of Calculus. Not for credit for students with High School Calculus.

or

MATH 110 (6) (Term 1 and 2)

Two-term course in differential calculus that covers the same material as the above mentioned one-term courses, but with additional material designed to strengthen your understanding of essential pre-calculus topics. Math 110 is designed specifically to help students with lower grades in senior-year secondary school mathematics succeed in first-year calculus at UBC and the course counts fully towards your UBC degree.

MATH 101 (3) Integral Calculus with Applications to Physical Sciences and Engineering (Term 2)

The definite integral, integration techniques, applications, modeling, linear ODE's.

Prerequisite: One of MATH 100, MATH 102, MATH 104, MATH 110, MATH 111, MATH 120, MATH 180, MATH 184.

or

MATH 103 (3) Integral Calculus with Applications to Life Sciences (Term 2)

Antiderivatives and definite integrals, applications to probability and dynamical systems.

Prerequisite: One of MATH 100, MATH 102, MATH 104, MATH 110, MATH 111, MATH 120, MATH 180, MATH 184.

or

MATH 105 (3) Integral Calculus with Applications to Commerce and Social Sciences (Term 2)

Antiderivatives, the definite integral, techniques of integration, partial derivatives, maxima and minima with constraints, discrete and continuous random variables.

Prerequisite: One of MATH 100, MATH 102, MATH 104, MATH 110, MATH 111, MATH 120, MATH 180, MATH 184.

For more information on which MATH courses should be selected please refer to the UBC Department of Mathematics site at www.math.ubc.ca/Ugrad/ugradCourses/ugradCal-choices.shtml

Year 2

ECON 101 (3) Principles of Microeconomics (Term 1 or 2)

Elements of theory and of Canadian policy and institutions concerning the economics of markets and market behaviour, prices and costs, exchange and trade, competition and monopoly, distribution of income.

FRST 231 (3) Introduction to Biometrics (Term 1)

Basic theories of probability and statistics. Sampling distribution, methods of estimation and hypothesis testing; goodness of fit and tests for independence; analysis of variance, regression and correlation.

Corequisite: One of MATH 100, MATH 102, MATH 104, MATH 180, MATH 184.

WOOD 244 (3) Quantitative Methods in the Wood Industry (Term 1)

Solving practical problems in the wood industry using computer-based mathematical tools including spreadsheets, visual basic programming and relational database systems.

Prerequisite: One of MATH 101, MATH 103, MATH 121.

WOOD 280 (3) Wood Anatomy and Identification (Term 1)

Introduction to tree growth; macroscopic and microscopic anatomy and identification of softwoods and hardwoods; descriptions of cell wall ultra-structure, wood variability and wood quality.

WOOD 376 (3) Mechanics of Wood Products (Term 1)

Introduction to the strength of materials with emphasis on the elastic properties and ultimate strength of wood and wood products.

Prerequisite: One of PHYS 101, PHYS 170 and one of MATH 101, MATH 103, MATH 121.

APSC 201 (3) Technical Communication (Term 1 or 2)

Written and oral communication in engineering. Report preparation, business correspondence and oral presentation of technical material.

Prerequisite: One of ENGL 110, ENGL 111, ENGL 112, ENGL 120, ENGL 121.

WOOD 271 (4) Wood Products Chemistry I (Term 2)

Chemistry relating to wood and wood products: chemistry of lignin, cellulose, hemicelluloses, extractives, and biological degradation of lignocellulosics; wood pressure impregnation procedures.

Prerequisite: WOOD 280 and one of CHEM 113, CHEM 123.

WOOD 282 (3) Wood Physics and Drying (Term 2)

Wood-moisture relationships, transport phenomena, acoustical and electrical properties of wood; wood drying methods.

Prerequisite: WOOD 280.

WOOD 284 (3) Sawmilling (Term 2)

Introduction to primary log breakdown systems and lumber material flow in modern sawmills.

WOOD 290 (3) Wood Products Manufacturing (Term 2)

Basic wood manufacturing including primary and secondary manufacturing. Focus on producing and joining lumber, edging, drilling, veneers and CNC equipment.

Prerequisite: WOOD 120.

WOOD 292 (2) Two-Dimensional and Solid Computer-Aided Graphics (Term 2)

Computer-aided graphics software used in the wood products sector. Visualization of product designs and specifications in two and three dimensions.

WOOD 305 (3) Wood Machining Skills (Summer following Term 2)

Safe working procedures for wood processing machinery, explanation of various manufacturing equipment, product documentation, product development and manufacturing processes

Prerequisite: WOOD 290.

Year 3

MECH 356 (3) Machine Components (Term 1)

Machines used for wood products manufacturing, design, maintenance, purchasing. Selection of components including drives, bearings, brakes, clutches, fasteners, springs. Not open to students in the Faculty of Applied Science.

Prerequisite: WOOD 376.

Corequisite: WOOD 386.

WOOD 330 (4) Industrial Engineering (Term 1)

Use of industrial engineering concepts and methods to analyze and improve organizations, including operations strategy and competitiveness, process planning, facilities layout, human resource issues, work measurement, inventory management, linear programming, sensitivity analysis, transportation problems, and capacity planning.

Prerequisite: All of ECON 101, FRST 231.

WOOD 335 (3) Quality Improvement (Term 1)

Modern techniques for improving quality in the workplace with particular emphasis on the forest products industry. Topics include quality control management, control charting, continuous improvement and analysis of variance techniques.

Prerequisite: FRST 231.

WOOD 341 (3) Problem Solving (Term 1)

Practical computer and problem solving skills; problem cases taken from industrial applications.

Prerequisite: WOOD 244.

WOOD 386 (3) Applied Mechanics of Materials (Term 1)

Beam analysis, shaft analysis, columns, stress/strain transformations, thin-walled pressure vessels, material strength failure, criteria, fatigue, design and sizing, ISO standards.

Prerequisite: WOOD 376.

COMM 398 (3) Introduction to Business Processes and Operations (Term 2)

The design and management of systems that efficiently and effectively supply products and services to the end-user. The concepts apply to a variety of settings such as manufacturing, logistics, healthcare, and others (for non-commerce students in third and fourth year).

or

COMM 399 (3) Logistics and Operations Management (Term 1 or 2)

The design and management of systems to make products, provide services and deliver them to the end user.

Prerequisite: All of COMM 290, COMM 291 (please note that FRST 231 and WOOD 244 satisfy these prerequisites).

WOOD 464 (3) Wood Finishing (Term 2)

Introduction to polymeric coatings and finishes used in the wood products industry. Examines surface preparation, application equipment and properties of various coatings.

Prerequisite: WOOD 290.

WOOD 465 (3) Wood Industry Business Management (Term 2)

Business management concepts common in the forest products industry including marketing, customer research, product development and design.

WOOD 485 (3) Furniture Construction (Term 2)

The theory and practice of modern construction techniques used in the manufacture of furniture and cabinets.

Prerequisite: All of WOOD 290, WOOD 305, WOOD 386.

Electives (3) must be courses numbered 300 or above. To be chosen in consultation with the Program Director.

Year 4

COMM 457 (3) Fundamentals of Financial Accounting (Term 1)

Financial accounting for business organizations; principles and problems of accounting measurements; forms of business organizations; financing of businesses. For non-Commerce students in third or fourth year only.

MECH 492 (4) CAD/CAM (Term 1)

Introduction to computer assisted design and manufacturing with a focus on the fundamental issues of geometry and machine tools including an understanding of standard computer tools. Applications to secondary wood products manufacturing. Not open to students in the Faculty of Applied Science.

Prerequisite: WOOD 290.

WOOD 440 (3) Job Costing and Engineering Economics (Term 1)

Use of engineering economics to evaluate investment proposals of an engineering nature, including decision making processes, cost concepts, time value of money, cash flow analysis, comparison methods, depreciation, replacement analysis, taxes, inflation and sensitivity analysis.

Prerequisite: WOOD 330.

WOOD 492 (3) Modeling for Decision Support (Term 1)

Applications of mathematical modeling, optimization, and simulation in forest planning and manufacturing; formulating models and interpreting results for decision support.

Prerequisite: One of FRST 232, WOOD 341.

WOOD 494 (3) Principles of Wood Cutting and Tooling (Term 1)

Wood cutting fundamentals, chip formation, cutting conditions, cutting edge maintenance, sawing, planing and molding, veneer cutting, chipping, turning.

Prerequisite: MECH 356.

WOOD 430 (3) Plant Layout and Design (Term 2)

Techniques for developing a plan, setting goals, and evaluating the impact of changes in the design, layout and operation of the factory with an emphasis on computer simulation.

Prerequisite: All of WOOD 290, WOOD 330, WOOD 485.

WOOD 461 (3) Globalization and Sustainability (Term 2)

Examination of globalization and its impact on sustainability, including social, economic, and environmental aspects.

Prerequisite: At least third-year standing.

WOOD 487 (4) Glued Wood Products (Term 2)

Physical, chemical and mechanical variables involved in cold, hot and non-conventional adhesive bonding of wood; preparation and characteristics of adhesives; plywood, composite wood panels, hardboard, medium density fibreboard and laminated wood manufacturing processes; important physical and chemical properties of products; methods of prefinishing.

WOOD 491 (3) Environmental Facilities Design (Term 2)

Introduction to pneumatic and hydraulic power, design and selection of waste recycling systems, boilers, energy generation and environmental legislation.

Prerequisite: All of WOOD 430, WOOD 464.

WOOD 493 (3) Project in Program Major (Term 2)

A report (approved by a faculty supervisor and the Program Director) based on either a technical description of a study, an extension of the senior co-op report, a detailed literature review, a research-based project, or a guided independent study developed by the student.

Prerequisite: Fourth-year standing

Electives (6) must be courses numbered 300 or above. To be chosen in consultation with the Program Director.

Co-op Work Terms

Junior Students

WOOD 300 (3) Co-op Work Term 1

Supervised work experience in approved organizations for a minimum of 13 weeks during the summer term of the second year. Restricted to students in the Co-operative Education Program in Wood Products Processing.

Intermediate Students

WOOD 311 (3) Co-op Work Term 2

Supervised work experience in approved organizations for 16 weeks in the second term of the third year. Restricted to students in the Co-operative Education Program in Wood Products Processing.

WOOD 312 (3) Co-op Work Term 3

Supervised work experience in approved organizations for 16 weeks during the summer term of the third year. Restricted to students in the Co-operative Education Program in Wood Products Processing.

Prerequisites: All of WOOD 300, WOOD 311.

Senior Students

WOOD 411 (3) Co-op Work Term 4

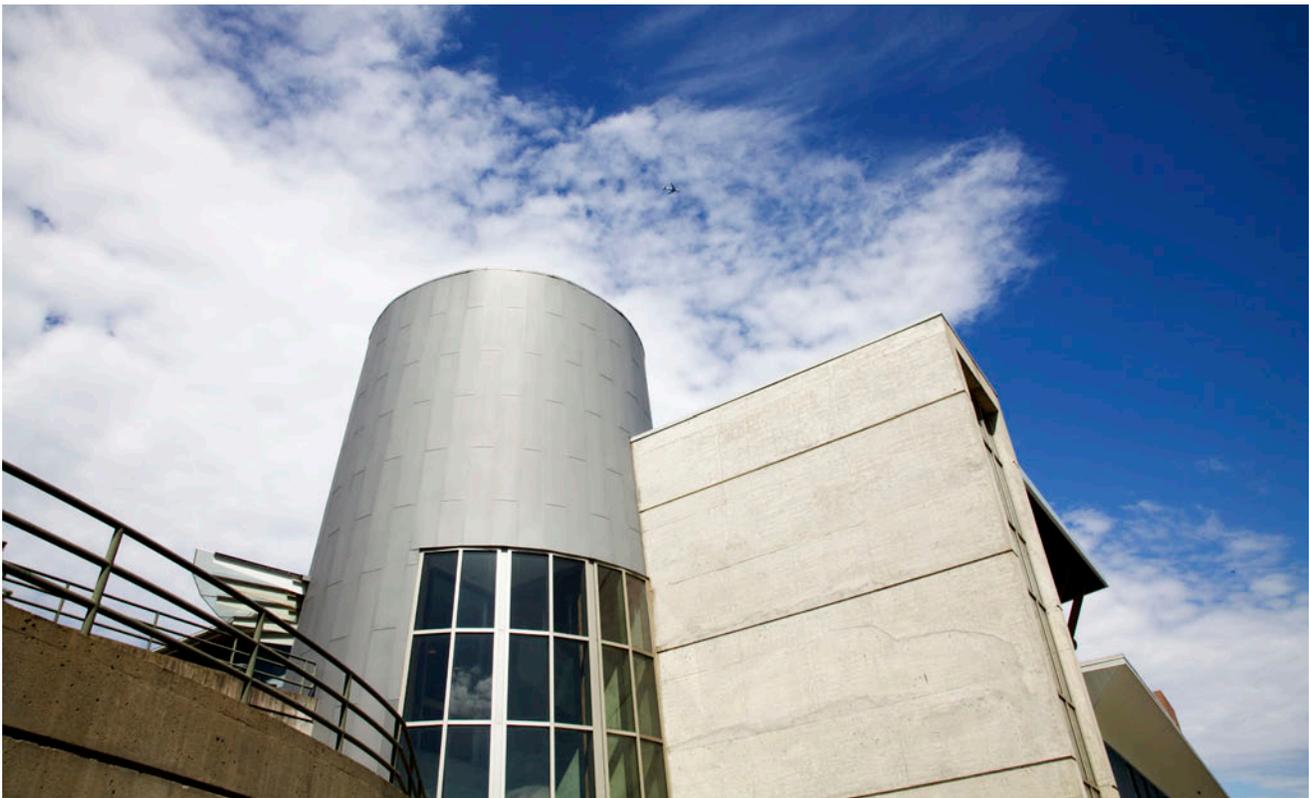
Supervised work experience in approved organizations for 16 weeks in the summer term of the fourth year. Restricted to students in the Co-operative Education Program in Wood Products Processing.

Prerequisite: Two of WOOD 300, WOOD 310, WOOD 311, WOOD 312.

WOOD 412 (3) Co-op Work Term 5

Supervised work experience in approved organizations for 16 weeks in the first term of the fifth year. Restricted to students in the Co-operative Education Program in Wood Products Processing.

Prerequisite: WOOD 300 and two of WOOD 310, WOOD 311, WOOD 312.



About Us

UBC

On the edge of the Pacific Ocean, surrounded by forests, students live and study in an extraordinary environment.

Just 30 minutes from the heart of downtown Vancouver, UBC is one of Canada's largest universities. Its international reputation for excellence in advanced research and learning attracts top students from across Canada and around the world. UBC also offers unique opportunities for international students and aboriginal peoples, and offers some of the city's best attractions and recreation facilities.

Faculty of Forestry

UBC Forestry is the largest forestry faculty in Canada, with world leaders in education and research. The Faculty comprises the Departments of Forest Resources Management, Forest Sciences and Wood Science, as well as the Centre for Advanced Wood Processing, the Forest Economics and Policy Analysis Research Unit and the Centre for Applied Conservation Research.

The Faculty has over 60 professors, who, in addition to their commitment to teaching, are extensively involved in research projects designed to further the understanding of forests, forest resources, and wood products. There are four distinct Bachelor of Science degrees:

Bachelor of Science in Forest Sciences

Specialization in International Forestry

Bachelor of Science in Natural Resources Conservation

Global Perspectives Major
Science and Management Major

Bachelor of Science in Wood Products Processing

Minor in Commerce

Bachelor of Science in Forestry

Forest Operations Major
Forest Resources Management Major

Forest Sciences Centre

The Faculty of Forestry's home is the award-winning Forest Sciences Centre. A stunning four-story atrium provides a central study area with wireless internet access. High-tech classrooms and large computer teaching labs, ensure that students learn with the latest technologies and software. Students can also relax in the 'Treehouse' – the student lounge.

Department of Wood Science

The Department of Wood Science is the largest in the English-speaking world, with a reputation for excellent education and research programs. The Department has 17 faculty members, including internationally recognized leaders in many research fields. Expertise includes wood products processing, wood anatomy, wood physics and mechanics, wood and pulping chemistry, industrial engineering, process control, gluing and composite products, drying, timber engineering, forest products biotechnology, business operations and international marketing. The Department offers undergraduate and graduate programs leading to B.Sc., M.Sc., M.A.Sc. and Ph.D. degrees.

Centre for Advanced Wood Processing

The Centre for Advanced Wood Processing (CAWP) is Canada's national centre of excellence for education and research related to wood products processing and advanced wood products manufacturing. CAWP has an outstanding reputation for its applied research, continuing education, training and extension programs. It also has some of the best facilities and equipment in the world, including a \$2 million wood products manufacturing facility.

Contact Us

Please contact us if you have any questions about the B.Sc. Wood Products Processing program. Talk to us to learn more about the degree, the experiences of our students, and career opportunities.

Academic Advising

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Program Director, Wood Products Processing
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Co-op and Recruitment

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www.wood.ubc.ca/info

