

# Brewmaster and Brewery Operations Management Diploma



## Description

This program prepares graduates for employment in the expanding brewery, microbrewery and brewpub industries. The program provides significant hands-on training on-site and includes specialized instruction in brewing science and technology, brewery operations, sales management and business applications specific to beer-related or brewery-related businesses.

## Program Learning Outcomes

Upon successful completion of this program, students will be able to:

1. Demonstrate the fundamental techniques of beer making.
2. Demonstrate laboratory analysis of beer as required in a brewery.
3. Select and use established techniques in marketing and public relations related to the beer industry.
4. Discuss the history and evolution of the beer industry in relation to today's market.
5. Identify, select and utilize process technology practices in brewery operations, packaging and handling.
6. Evaluate consistency and quality of beer, and determine beer style and characteristics.
7. Discuss and apply business strategies related to brewery operations, including labour management, sales and government legislation.
8. Formulate and develop a beer recipe for the market place.
9. Utilize computer applications for brewery operations.
10. Demonstrate effective communication and personal management skills in the work place.

## Requirements:

### Term 1

		Course Credits (Total Credits:15)
<b>BRW</b>	<b>1101 Basic Practical Brewing (1-2-0 hrs)</b> Through the operation of the Olds College Teaching Brewery and Pilot brewery, you will learn the fundamentals of beer making. Using brewery equipment and technology you will develop your knowledge of the beer industry and the critical role of brewery safety.	<b>3</b>
<b>BRW</b>	<b>1103 Sensory Evaluation of Beer (1.5-1.5-0 hrs)</b> In this course, you will develop skills to critically evaluate a beer's sensory properties, judge quality and detect potential defects in beer. In an ideal tasting environment, you will learn how to isolate and identify a wide range of beer flavours. You will investigate the physiology and psychology of sensory perception and assess and describe the elements of beer quality using the appropriate brewing jargon. Finally, you will learn how to create an ideal sensory environment and how to select the appropriate sensory test to meet the objectives of a sensory study.	<b>3</b>
<b>BRW</b>	<b>1150 The Brewing Industry and You (3-0-0 hrs)</b> This course will provide an introduction to the trade of brewing. You will investigate the brewing process from grain to glass and discover how separate processes interact to produce the final product. You will investigate the constituents of beer and how they affect an individual, in particular alcohol, its potential for abuse, and its influence on society. You will be required to complete the ProServe certification. You will also develop inter- and intra-personal skills that are important for succeeding in the brewery trade and in the development of an ethical mindset.	<b>3</b>
<b>BRW</b>	<b>1300 Brewing Ingredients (3-0-0 hrs)</b> In this course, the student will learn how various ingredients in the beer making process affect the style and quality of beer and will examine barley and malting; the growing and selection of barley, the different varieties for malting and the technology and science of malting grains for different beer styles. The student will analyze malt, specialty malts and adjuncts and examine the growing of hops and varieties of hops that come from principal production areas worldwide. The student will investigate the effect of hops on the production of wort and the development of beer flavour.	<b>3</b>
<b>BRW</b>	<b>1050 Mathematics and Statistics for the Brewer (3-1-0 hrs)</b> Students develop mathematics and statistical skills applicable to practical problems in the brewery trade. Topics include presentation of financial information, commercial credit, simple and compound interest, mortgages, loans, depreciation methods, lease versus buy decision, statistical analysis and testing. This course prepares students for later courses in beer recipe development, sales and promotion, brewery operations and management.	<b>3</b>

### TERM 2

		Course Credits (Total Credits:15)
<b>BRW</b>	<b>1200 Brewing Microbiology (3-1-0 hrs)</b> This course will focus on microorganisms involved in beer production. Students will develop an awareness and understanding of the importance of the biology of yeasts, their growth, propagation and management. Students will also be exposed to other organisms that influence brewing and the role played by enzymes. Laboratory exercises will provide hands-on experience and will include biology, cultivation, purification, and identification of yeast and bacteria involved in beer production.	<b>3</b>
<b>BRW</b>	<b>1201 Practical Brewing (1-2-0 hrs)</b>	<b>3</b>

	In this course, through the operation of the Olds College Teaching Brewery and Pilot brewery, you will learn advanced beer making techniques. Using brewery equipment and technology you will further develop your knowledge of the beer industry and the critical role of brewery safety.		
<b>BRW</b>	<b>1203</b>	<b>Sensory Evaluation of World Beers (1.5-1.5-0 hrs)</b>	<b>3</b>
	In this course, you will develop your beer sensory skills. You will develop a deeper understanding of beer flavour and terminology of sensory evaluation. You will develop your own personal tasting procedure and discuss ways of continuing your training on your own. You will enhance your skills to critically evaluate a beer's sensory properties, make a judgment on quality and detect potential defects. You will compare a variety of tasting profiles and learn how they apply to combinations with each other and food.		
<b>BRW</b>	<b>1304</b>	<b>Brewhouse Calculations and Recipe Formulation (3-0-0 hrs)</b>	<b>3</b>
	In this course you will learn to use mathematics in the brewery in materials control and development of beer recipes to determine precise alcohol levels, and grain and hop usage rates. You will develop your own recipes and test them in the brewing courses.		
<b>COM</b>	<b>1020</b>	<b>Workplace Communication (3-0-0 hrs)</b>	<b>3</b>
	In this course students develop writing and presentation skills. Students will apply rules of grammar, spelling, punctuation and mechanics in the development of letters, email and short reports as well as other documents relevant to their industry. Students will demonstrate strategies and techniques for creating informative and persuasive presentations.		
<b>TERM 3</b>			
			Course Credits (Total Credits:15)
<b>BRW</b>	<b>1205</b>	<b>Brewery Equipment and Technology (3-0-0 hrs)</b>	<b>3</b>
	In this course you will learn the basics of unit operations and processing equipment used in modern commercial beer making. Visits to breweries will provide hands-on experience with equipment from filtration to packaging. You will investigate scheduling, record keeping, packaging techniques, basic tanks and temperature controls, lauter tuns, mash filters and wort boiling systems.		
<b>BRW</b>	<b>1206</b>	<b>Brewing Chemistry (3-1-0 hrs)</b>	<b>3</b>
	In this course you will review chemistry fundamentals as they apply to the production of wort and beer with emphasis on wort production, fermentation, and filtration. Using laboratory exercises, you will study the properties of gases and liquids, thermodynamics, pH and pressure, and how they influence brewery production processes and beer quality. You will also develop knowledge and skills about the different types of chemicals used in beer production and maintenance of brewery hygiene. Finally, you will become familiar with the lab equipment and lab techniques used to measure, monitor and analyze the different chemical properties of wort and beer, and understand their relationships to beer production.		
<b>BRW</b>	<b>1301</b>	<b>Practical Brewing II (1-2-0 hrs)</b>	<b>3</b>
	In this course, through the use of the Olds College Teaching Brewery and Pilot brewery, you will operate and control both systems independently. Using brewery equipment and technology you will further develop your knowledge of the beer industry and the critical role of brewery safety.		
<b>BRW</b>	<b>1306</b>	<b>Filtration, Carbonation and Finishing (2.5-0.5-0 hrs)</b>	<b>3</b>
	In this applied and theoretical course you will study cold storage, the different types of filters, their operation and role in the clarification of beer. You will also practice natural and forced carbonation methods and the stabilization of beer ready for packaging operations.		
<b>BRW</b>	<b>2402</b>	<b>Beer Sales and Promotions (3-0-0 hrs)</b>	<b>3</b>
	In this course, students will explore the fields of marketing, sales and management for the brewing industry. Students will learn the basics of marketing and sales techniques in the consumer and business marketplace. The management component will include the regulatory requirements for the sale and advertisement of beer in Alberta and the license requirement to sell beer in multiple channels. Students will create a sales and marketing plan, set up and run a sales department including the staffing, managerial and oversight requirements.		
<b>TERM 4</b>			
			Course Credits (Total Credits:15)
<b>BRW</b>	<b>1104</b>	<b>History of Brewing and Beer (3-0-0 hrs)</b>	<b>3</b>
	In this course the student will investigate the history of beer and brewing from its earliest recorded origins in Mesopotamia, the evolution of the brewing industries and the roles played by individuals, organizations and governments in beer development.		
<b>BRW</b>	<b>1207</b>	<b>Packaging (2.5-0.5-0 hrs)</b>	<b>3</b>
	In this course, the student will develop a basic knowledge of bottling, canning and kegging beer, emphasizing best practices and their impact on product stability and shelf life. Students will learn how issues of colloidal stability, microbiological stability and oxygen pickup relate to processing techniques and how packaging quality control tests relate to process control. Students will investigate how draught system design and maintenance relates back to the core of delivering beer at its best to the consumer. Students will learn principles of labelling and packaging line design. Students will learn the importance of, and practice Health and Safety in the workplace.		
<b>BRW</b>	<b>2100</b>	<b>Brewery Management and Operations (3-0-0 hrs)</b>	<b>3</b>
	In this course the student will learn the fundamentals of brewery management and the role of vertical integration within the brewery trade. The student will gain knowledge of different managerial metrics including annual plans, budgets, labour management, scheduling of work, legal compliance and recordkeeping. The student will discover the role of government in brewery operations, marketing and sales.		
<b>BRW</b>	<b>2302</b>	<b>Specialty Brewing (1-2-0 hrs)</b>	<b>3</b>
	In this course you will apply advanced techniques of beer making. You will develop personal recipes that reflect a variety of seasonal and specialty beers with the complete analysis/report of the		

product(s). You will use the Olds College Teaching Brewery as your lab and base to make student beer.

**ACT****1000 Recordkeeping (1.5-0-1.5 hrs)****3**

Recordkeeping is a course that provides learners with the opportunity to develop competencies in input, manipulation and output of data necessary to demonstrate the successful operation of a business enterprise. This course is designed to provide an application of spreadsheet software skills to the operations tracking of data needed to develop financial statements. It is strongly recommended students have a working knowledge of spreadsheet software.

### Graduation Requirements

- Completion of 60 credits
- Completion of all required courses and credits as per Program of Study
- Cumulative program G.P.A. of 2.00 or better
- Satisfactory completion of occupational experience and/or assignment, if required

#### Changes to this Program

Every effort has been made to ensure that information in this program is accurate at the time of publication. The College reserves the right to change programs if it becomes necessary so that program content remains relevant. In such cases, Olds College will provide clear and timely notice of the changes.

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4500-50 Street Olds, Alberta, Canada, T4H 1R6

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