FLATHEAD VALLEY COMMUNITY COLLEGE

AGENDA ITEM *8

V. COLLEGE ISSUES

C. Academic Program Proposals

BACKGROUND:

- Brewing Science and Brewery Operations CTS and AAS (deletion)
- Geospatial Technology CTS (deletion)
- Goldsmithing and Jewelry Design AAS and CAS (moratorium)

The Brewing Science and Brewery Operations CTS and AAS have been in moratorium since 2022. As three years is the maximum time allowed by the Montana Board of Regents for a program to stay in moratorium status, the program needs to be submitted for termination.

The Geospatial Technology CTS program has been in moratorium since 2022. As three years is the maximum time allowed by the Montana Board of Regents for a program to stay in moratorium status, the program needs to be submitted for termination.

On May 1st the Curriculum Committee voted to place Goldsmithing and Jewelry Design AAS and CAS into moratorium. With the retirement of the fulltime faculty member who runs the program, Academic Affairs and Continuing Education need to suspend accepting new students into the program to allow time to determine the best path forward for this area of study.

Archived Catalog

Brewery Technician, CTS (Moratorium)

This program has been placed into moratorium and is not accepting new students at this time.

The Brewery Technician Certificate program is designed for students wishing to enter the brewing industry as a Brewery Operator in packaging, cellaring, and/or wort production. It exposes students to commercial equipment and best practices in safety and hygiene, beer production from grain to glass, mainstream beer styles and sensory evaluation, quality assurance techniques, and biology coursework. Students perform brewing lab work at the campus brewery, featuring a custom 4-barrel brewing system and pilot equipment. All coursework in the Brewery Technician CTS program is pre-requisite coursework for the Brewing Science and Brewery Operations AAS degree program. Upon successful completion of the Brewery Technician CTS, students will be able to

- Describe the overall process of beer production;
- Perform Clean In Place (CIP) operations on cellar and brewing equipment;
- Understand operating principles for basic packaging machinery;
- Follow Standard Operating Procedures for wort production and cellar operations;
- Describe yeast biology and fermentation; and
- Work safely and hygienically in a fast-paced and dynamic environment.

Required Courses

Fall Semester

- BIOB 160NL - Principles of Living Systems Credit(s): 4
- BREW 101 - Brewing Methods I Credit(s): 5 *
- BREW 131 - Beer Styles and Sensory Evaluation I Credit(s): 1 *
- BREW 149 - Beer Packaging and Draught Technology Credit(s): 2 *
- BREW 151 - Cellar Operations Credit(s): 3 *

First Semester Total: 15

Spring Semester

- BREW 132 - Beer Styles and Sensory Evaluation II Credit(s): 1 *
- BREW 150 - Brewhouse Processes Credit(s): 4 *
- BREW 199 - Capstone I: Brewing Operations Credit(s): 5 *
- BREW 222 - Safety and Sustainability in Brewing Credit(s): 1 *

Second Semester Total: 14

Total Credits: 29

Program Information

- A grade of "C" or better in all courses is required for graduation eligibility.

Admission Guidelines and Application Deadline

- Due to limited classroom and lab availability, this degree requires an admissions process. Application deadline is August 1.
- Students must be 21 years of age to start the program.

Additional Costs

- Program costs in addition to tuition, books and lab fees, are estimated at $1,000. Scholarships are available.

Opportunities after graduation

- This degree prepares students for entry-level brewing industry positions.
- This degree serves as a pre-requisite for the AAS Brewing Science and Brewery Operations program at FVCC.

Advising Information:

For more information about this program, contact the advisor.

Academic Advisor
Russ Lamson
LRC 129
(406) 756-3885
rlamson@fvcc.edu

Archived Catalog

Brewing Science and Brewery Operations, AAS (Moratorium)

This program has been placed into moratorium and is not accepting new students at this time.

The Brewing Science and Brewery Operations program is designed for the entry-level brewer wishing to expand theoretical knowledge and experience in the field of brewing science and business operations. Graduates should be prepared for mid-level brewery jobs with potential for management or entrepreneurial ventures commensurate with field experience. Students will build on an operations-based foundation (first-year CTS curriculum) with second-level brewing coursework, as well as chemistry and business operations classes. Students have exclusive use of the custom 4-barrel campus brewery and pilot system, quality lab, and classroom. They will complete coursework including topics in brewing technology and operations, fermentation sciences, recipe design, sensory techniques, brewery safety and compliance, and business applications. Upon successful completion of the Brewing Science and Brewery Operations AAS, students will be able to

- Formulate beer recipes with an integral understanding of the ingredients and processes in mind;
- Analyze yeast fermentation performance and the influence health and nutrients have on the end beer flavor, aroma, and stability;
- Aseptically handle and propagate yeast for use and re-use in brewery fermentations;
- Understand stability techniques employed by small and large breweries;
- Perform chemical analysis of beer ingredients and products and asses for brewing and shelf-life suitability;
- Understand inventory management of raw ingredients and product and build software to assist in tracking and predictions;
- Write a start-up business plan for a brewery; and
- Perform all aspects of commercial brewery production from raw ingredient procurement to packaging with quality, consistency, safety and sanitization as priorities.

First Year

Fall Semester

- BIOB 160NL - Principles of Living Systems Credit(s): 4

- BMGT 205C - Professional Business Communication Credit(s): 3 * [1] [R]
  OR
- WRIT 101W - College Writing I Credit(s): 3 * [1] [R]

- BREW 101 - Brewing Methods I Credit(s): 5 *
- BREW 131 - Beer Styles and Sensory Evaluation I Credit(s): 1 *
- BREW 149 - Beer Packaging and Draught Technology Credit(s): 2 *
- BREW 151 - Cellar Operations Credit(s): 3 *

First Semester Total: 18

Spring Semester

- BREW 132 - Beer Styles and Sensory Evaluation II Credit(s): 1 *
- BREW 150 - Brewhouse Processes Credit(s): 4 * R
- BREW 199 - Capstone I: Brewing Operations Credit(s): 5 * R
- BREW 222 - Safety and Sustainability in Brewing Credit(s): 1 *

- COMX 111C - Introduction to Public Speaking Credit(s): 3 [1] R

  OR
- COMX 115C - Introduction to Interpersonal Communication Credit(s): 3 [1] R

Second Semester Total: 17

Second Year

Fall Semester

- BREW 102 - Brewing Methods II Credit(s): 5 *
- BREW 231 - Beer Styles and Sensory Evaluation III Credit(s): 1 *
- BREW 298 - Internship: Professional Brewing Credit(s): 1-2 * [2]
- CAPP 116 - Short Courses: MS Excel Credit(s): 1 [1]
- CHMY 121NL - Introduction to General Chemistry Credit(s): 4 *

First Semester Total: 12-13

Note: Students may take BREW 298 for 1 or 2 credits at a time, this semester and/or next. Semester credit totals will vary depending on the student's choice. Overall, students must earn at least 2 credits in BREW 298 to meet the total 61 credits required for the program.

Spring Semester

- BREW 141 - The Business of Brewing Credit(s): 2 *
- BREW 232 - Beer Styles and Sensory Evaluation IV Credit(s): 1 *
- BREW 299 - Capstone II: Brewing Operations Credit(s): 6 *
- CHMY 170 - Applied Brewing Chemistry Credit(s): 4 *

Second Semester Total: 13

Total Credits: 61

[1] WRIT 101W/BMGT 205C, COMX 111C/COMX 115C, and CAPP 116 may be taken during any semester, including summer semester.

[2] A professional brewing internship is required for this program. Students may repeat BREW 298 to complete a minimum of two internship credits and a maximum of four. Students are eligible to take internships after the second semester in the program and will be guided through the application process.

[R] Indicates Related Instruction requirement.

*Indicates prerequisite and/or corequisite needed. Check course description.

Program Information

- All courses in this program must be passed with a grade of "C" or better for graduation eligibility.

Admission Guidelines

- Due to limited classroom and lab availability, this program requires an admissions process: **Application deadline is November 1.**
- Placement exams may be required.
- Students must be at least 21 years of age to start the program.

Additional Costs

- Additional program costs, books and lab fees, are estimated at $2,000. Scholarships are available.

Opportunities after Graduation

- This degree prepares students for entry- and mid-level brewing industry positions with opportunities for advancement. Graduates may work as assistant brewers, cellar and packaging operators, and/or quality assurance technicians to start, with excellent professional growth potential.

Advising Information:

For more information about this program, contact the advisor.

Academic Advisor

Russ Lamson

LRC 129

(406) 756-3885

rlamson@fvcc.edu

Archived Catalog

Geospatial Technology, CTS (Moratorium)

This program has been placed into moratorium and is not accepting new students at this time.

Knowledge of geospatial technology is an increasingly sought-after skill in industries ranging from natural resources to public health. This certificate program teaches skills needed to successfully use Geographic Information Systems (GIS) software and other related technologies in a professional setting. This program contains significant hands-on experiences in GIS, Global Positioning System (GPS) mapping, remote sensing, and unmanned aerial mapping systems, as well as individual capstone projects. This certificate complements any major at FVCC and provide an opportunity for working professionals to develop geospatial skills. Upon completion of this program, students will be able to

- Use a variety of GIS application programs to create and analyze geospatial data;
- Acquire geospatial data from GPS devices, existing Earth observation satellites, and unmanned aerial mapping systems;
- Design database structures to store and retrieve data;
- Present cartographic results in both print and web formats; and
- Implement independent projects to include formulating spatial questions, identifying and acquiring necessary data, developing and implementing appropriate workflows, and summarizing results in both written and map formats.

Fall Semester

- GPHY 150 - Introduction to Geospatial Technology and Land Information Credit(s): 2
- GPHY 250 - Web GIS Credit(s): 2
- GPHY 284 - Introduction to GIS Science and Cartography Credit(s): 4
- SRVY 248 - Unmanned Aerial Mapping Systems Credit(s): 2

First Semester Total: 12

Spring Semester

- CSCI 127 - Joy and Beauty of Data Credit(s): 4
  OR
- CSCI 240 - Databases and SQL Credit(s): 3
  OR
- SRVY 280 - Land Surveying Computers Credit(s): 2 *

- GPHY 286 - Advanced GIS Credit(s): 4 *
- SRVY 245 - GPS Mapping Credit(s): 2 *
- SRVY 275 - Analytic Photogrammetry and Remote Sensing Credit(s): 3 *

Second Semester Total: 13-15

Total Credits: 25-27

*Indicates prerequisite and/or corequisite needed. Check course description.

Program Information

- Students employed in a professional setting may be able to satisfy the project requirements of the SRVY 290 credits within their current work responsibilities.
- Students in this program are expected to have a basic level of computer proficiency.
- Courses in this program include lab fees at approximately $20 per course.

Opportunities after Graduation

- The uses of geospatial technology are widespread and diverse. As a result, it is identified by the Department of Labor as a high-growth industry. Geospatial technology is used by anyone in need of understanding spatial relationships including the following professions: forestry, wildlife biology, environmental science, hydrology, planning, public health, criminal justice, homeland security, emergency management, business, and engineering, among many others. The national geospatial technology job market is growing at an annual rate of almost 35 percent (Geospatial Information & Technology Association).

Advising Information:

For more information about this program, contact the FVCC Student Support Center or the Faculty Advisor.

Student Support Center Advisor	Faculty Advisor
Russ Lamson	Tim Eichner, M.S.
LRC 129	RH 155
(406) 756-3885	(406) 756-3898
rlamson@fvcc.edu	teichner@fvcc.edu

Goldsmithing and 3D Jewelry Design, AAS

This program has been placed into moratorium and is not accepting new students at this time.

The Goldsmithing and 3D Jewelry Design program prepares students for careers as independent studio artists, designers, and studio technicians within the jewelry industry. Students will become proficient in computer modeling, fabrication, casting, stone setting, forming, repair, and design.

Flathead County, MT

Search new location

Salary Range

50th Percentile (Median)

Overview

83

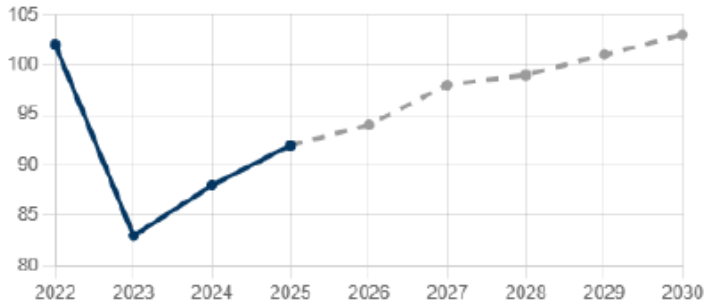
Currently Employed

$18,737

Average Salary

Employment Trends

-9.8%	12%
Past Growth	Projected Growth
2022-2025	2025-2030



Annual Employment Numbers

Top Occupations by Income

- Jewelers and Precious Stone and Metal Workers
- Fine Artists, Including Painters, Sculptors, and Illustrators
- Craft Artists

About this data

At FVCC, your success is our priority. Click to Apply

Program Outcomes

Upon completion of this program, students will be able to

- Fabricate jewelry;
- Design and produce jewelry using CAD/CAM;
- Cast jewelry in various forms;
- Utilize a variety of stone setting techniques;
- Perform a variety of surface treatments;
- Forge and form unique components using both anticlastic and synclastic forming techniques;
- Use a hydraulic press and die making for forming;
- Perform basic jewelry repair; and
- Exhibit a professional jewelry portfolio representing various aspects of the jewelry industry.

Required Courses

First Year

Fall Semester

- ARTJ 210F - Jewelry and Metalsmithing I Credit(s): 3
- ARTJ 231 - 3D Jewelry Design and Modeling I Credit(s): 4
- ARTJ 250 - Wax Modeling and Casting I Credit(s): 3
- ARTZ 106F - Visual Language-2-D Foundations Credit(s): 3
- M 094~ - Quantitative Reasoning Credit(s): 4 * R

First Semester Total: 17

Spring Semester

- ARTJ 211F - Jewelry and Metalsmithing II Credit(s): 3 *
- ARTJ 232 - 3D Jewelry Design and Modeling II Credit(s): 4 *
- ARTJ 251 - Wax Modeling and Casting II Credit(s): 3 *
- ARTJ 260 - Stone Setting I Credit(s): 3 *
- BMGT 205C - Business Communication Credit(s): 3 * R

Second Semester Total: 16

CAS Total Credits: 33**

R Indicates Related Instruction requirement.

*Indicates prerequisite and/or corequisite needed. Check course description.

**Upon completion of the CAS program, students may choose to continue on to earn a Goldsmithing and 3D Jewelry Design, AAS degree.

Second Year

Fall Semester

- ARTJ 212 - Jewelry and Metalsmithing III Credit(s): 3 *
- ARTJ 220 - Forging and Smithing I Credit(s): 3 *
- ARTJ 233 - 3D Jewelry Design and Modeling III Credit(s): 4 *
- ARTJ 270 - Surface Embellishments I Credit(s): 3 *
- ARTZ 105F - Visual Language-Drawing Credit(s): 3

First Semester Total: 16

Spring Semester

- ARTJ 213 - Jewelry and Metalsmithing IV Credit(s): 3 *
- ARTJ 234 - 3D Jewelry Design and Modeling IV Credit(s): 4 *
- ARTJ 261 - Stone Setting II Credit(s): 3 *
- ARTJ 280 - Jewelry Repair I Credit(s): 3 *
- GDSN 274 - Portfolio Presentation Credit(s): 1 * R

Second Semester Total: 14

AAS Total Credits: 63

[R] Indicates a Related Instruction requirement.

*Indicates prerequisite and/or corequisite needed. Check course description.

Recommended Course Offering:

Students receiving financial aid or veteran's benefits should check with the Financial Aid Office before registering for recommended courses.

- BMGT 210 - Small Business Entrepreneurship Credit(s): 3

Program Information

- All courses within this degree program must be taken for a letter grade. No course may be taken on a Satisfactory/Unsatisfactory (S/U) basis.
- Some of the courses in this program will transfer as electives only. Students considering transfer to a four-year college should contact their advisor for more information.

Opportunities After Graduation

- This program prepares students for careers as independent studio artists, designers, and studio technicians within the jewelry industry.
- This program will prepare students for high-tech CAD/CAM positions in the jewelry industry.

Advising Information:

For more information about this program, contact an advisor.

Academic Advisor	Faculty Advisor
Amber Paulson	Douglas Harling, M.F.A.
LRC 129	AT 110
(406) 756-3882	(406) 756-3634
apaulson@fvcc.edu	dharling@fvcc.edu

Goldsmithing and 3D Jewelry Design, CAS

This program has been placed into moratorium and is not accepting new students at this time.

The Goldsmithing and 3D Jewelry Design CAS program prepares students for entry level positions within the jewelry industry and introduces students to careers as independent studio artists and designers.

Program Outcomes

Upon completion of this program, students will have a working knowledge of

- CAD/CAM jewelry design and modeling;
- Basic jewelry fabrication;
- Various forms of casting;
- A variety of stone setting techniques;
- Basic surface finishing techniques;
- Basic design skills; and
- Basic math skills.

Required Courses

First Year

Fall Semester

- ARTJ 210F - Jewelry and Metalsmithing I Credit(s): 3
- ARTJ 231 - 3D Jewelry Design and Modeling I Credit(s): 4
- ARTJ 250 - Wax Modeling and Casting I Credit(s): 3
- ARTZ 106F - Visual Language-2-D Foundations Credit(s): 3
- M 094~ - Quantitative Reasoning Credit(s): 4 * R

First Semester Total: 17

Spring Semester

- ARTJ 211F - Jewelry and Metalsmithing II Credit(s): 3 *
- ARTJ 232 - 3D Jewelry Design and Modeling II Credit(s): 4 *
- ARTJ 251 - Wax Modeling and Casting II Credit(s): 3 *
- ARTJ 260 - Stone Setting I Credit(s): 3 *
- BMGT 205C - Business Communication Credit(s): 3 * R

Second Semester Total: 16

CAS Total Credits: 33**

[R] Indicates Related Instruction requirement.

*Indicates prerequisite and/or corequisite needed. Check course description.

**Upon completion of the CAS program, students may choose to continue on to earn a Goldsmithing and 3D Jewelry Design, AAS degree.

Program Information

- All courses in this program must be taken for a letter grade. No course may be taken on a Satisfactory/Unsatisfactory (S/U) basis.
- For students considering transfer to a four-year college: some of the courses in th is program will transfer as electives only. See your advisor for details.

Opportunities after Graduation

- This program prepares students for careers as independent studio artists, designers, and studio technicians within the jewelry industry.
- This program will prepare students for high-tech CAD/CAM positions in the jewelry industry.

Advising Information:

For more information about this program, contact an advisor.

Academic Advisor	Faculty Advisor
Amber Paulson	Douglas Harling, M.F.A.
LRC 129	AT 110
(406) 756-3882	(406) 756-3634
apaulson@fvcc.edu	dharling@fvcc.edu