

Academic Plan Associate of Science Fermentation Science

Catalog Year: 2020/2021 60 Credits

The purpose of a statewide articulation agreement is to identify the courses a student at a Colorado public community college must complete as part of an AA/AS degree to be guaranteed to be able to complete the designated baccalaureate degree program at any public four-year college and university (hereafter referred to as receiving institutions) that offers that program within the minimum number of credits designated by the Colorado Commission on Higher Education.

		Pre or Co	Course Availabili		ability
Required Courses	Credits	Reqs Rqd	Fall	Spr	Sum
General Education Courses					
Arts / Humanities GT-AH1-AH4	3		✓	✓	✓
Arts / Humanities GT-AH1-AH4	3		✓	✓	✓
BIO 111 - General College Biology I with Lab: GT-SC1*	5		✓	•	✓
 CHE 101 - Introduction to Chemistry I with Lab: GT-SC1* 	5		✓	✓	✓
COM 115 - Public Speaking*	3		✓	✓	✓
ENG 121 - English Composition I: GT-CO1*	3	✓	✓	✓	✓
ENG 122 - English Composition II: GT-CO2	3	✓	✓	✓	✓
History GT-HI1	3		✓	✓	✓
MAT 121 - College Algebra: GT-MA1 or Higher*	4		✓	✓	✓
SOC 101 - Introduction to Sociology I: GT-SS3*	3		✓	✓	✓
Social / Behavioral Science GT-SS1-SS3	3		✓	✓	✓
Additional Required Courses					
BIO 208 - General College Microbiology	5			✓	
 CIS 115 - Introduction to Computer Information Systems OR CIS 118 Introduction to PC Applications 	3		•	✓	✓
Elective (See Notes for specific requirements)	1		✓	✓	✓
FER 101 - Craft Beer Brewing*	4		✓		
FER 203 - Fermented Foods Sciences*	4			✓	
PHY 111 - Physics: Algebra-Based I with Lab: GT-SC1*	5	✓	✓	✓	



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Pre-Requisites, Co-Requisites, and Recommendations (grade C or better required)

Where requirements are listed as course categories (e.g. Electives, Arts/Humanities) rather than as specific courses, please note that depending upon course choice, pre-requisites may be required.

ENG 121 - English Composition I: GT-CO1*

• Co-Requisite: CCR 094 - Studio 121

ENG 122 - English Composition II: GT-CO2

• Pre-Requisite: ENG 121 - English Composition I OR ENG 131 - Technical Writing I

PHY 111 - Physics: Algebra-Based I with Lab: GT-SC1*

• Pre-Requisite: MAT 121 - College Algebra or Higher

Program Outcomes

- Demonstrate aptitude with scientific research methods. As such, they will be able to apply scientific principles to a research project, analyze experimental results, and draw reasonable conclusions from data.
- Synthesize knowledge of key scientific fermentation principles across various applications.
- Identify main biological and chemical inputs and products for diverse fermentation processes.
- Apply knowledge of fermentation biochemistry to analyze new situations.
- Integrate biological and chemical processes to the stability and quality of fermented foods.
- Describe the brewing process and explain key factors influencing beer maturation, quality, and contamination.

Notes

- *This course requires college level readiness as measured by Accuplacer, ACT, or SAT scores; approved high school course work that is less than five years old; or successful completion of appropriate college-readiness course.
- AAA 101 College 101: Student Experience is required for all new college students seeking degrees or transfer.
- Course availability is subject to change.
- Electives: Select any Guaranteed Transfer course or any of the following (excluding Special Topics, Independent Study, Capstone, and Internships): AAA 101, AAA 109, AST (100 or higher), BIO (100 or higher), CHE (100 or higher), CIS 118, CSC 119, CSC 126, CSC 160, CSC 161, CSC 165, CSC 200, CSC 225, CSC 233, CSC 236, CSC 240, EGG (100 or higher), any Foreign Language courses (including ASL) numbered 111 or higher, HNR 100, HNR 289, HWE 100, HWE 111, HWE 125, MAT 121 (or higher, except 155 / 156), or PHY 111 (or higher).
- FER 101 and FER 203 will be offered in alternate fall semesters.
- Follow the Recommended Course Sequence on the following pages of this document.
- In order to meet program requirements, students registered for ENG 121 or ENG 131 must also register for CCR 094 unless they can demonstrate otherwise meeting the CCR 094 standard through assessment testing, prior college coursework, or recent High School coursework. See an Advisor for details.
- Recommended courses may be listed above for certain electives; consult with the Academic Advising Office (advising@arapahoe.edu or 303.797.5664) for additional elective recommendations.
- Refer to 20/21 catalog for specific requirements and important information about this degree
- The Colorado Department of Higher Education website has additional information about this statewide agreement.

Graduation Requirements

• All courses required for this degree must be completed with a "C" or better to be considered for transfer to another Colorado institution. Transferability of courses to colleges/universities outside of Colorado is determined by the receiving institution.



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• To graduate, students must apply for graduation (form available at www.arapahoe.edu/departments-and-programs/graduation) by the deadline and meet all degree requirements.



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RECOMMENDED COURSE SEQUENCE FULL-TIME TRACK

Year 1: Fall	Credits	Course
	5	BIO 111 - General College Biology I with Lab: GT-SC1
	3	COM 115 - Public Speaking
	3	ENG 121 - English Composition I: GT-CO1
	4	FER 101 - Craft Beer Brewing
Year 1: Spring	Credits	Course
	3	CIS 115 or CIS 118
		~Recommended Course(s)~
		CIS 118 - Intro to PC Applications
	1	Elective
		~Recommended Elective(s)~
		CHE 111 - General College Chemistry I with Lab: GT-SC1*
		ECO 201 - Principles of Macroeconomics: GT-SS1*
		ECO 202 - Principles of Microeconomics: GT-SS1* ECO 245 - Environmental Economics
		GEO 111 - Physical Geography: Landforms with Lab: GT-SC1*
		GEY 111 - Physical Geology w/Lab: GT-SC1*
		MAT 135 - Introduction to Statistics: GT-MA1*
	3	ENG 122 - English Composition II: GT-CO2
	3	History GT-HI1
		~Recommended History Course(s)~
		HIS 101 - Western Civilization: Antiquity-1650: GT-HI1*
		HIS 102 - Western Civilization: 1650-Present: GT-HI1*
		HIS 111 - The World: Antiquity-1500: GT-HI1*
		HIS 112 - The World: 1500-Present: GT-HI1*
		HIS 121 - U.S. History to Reconstruction*
		HIS 225 - Colorado History: GT-HI1* HIS 247 - 20th Century World History: GT-HI1*
	4	MAT 121 - College Algebra: GT-MA1 or Higher
Year 2: Fall	Credits	Course
rear 2. ran	3	Arts / Humanities GT-AH1-AH4
	3	~Recommended Arts / Humanities Course(s)~
		ART 110 - Art Appreciation GT-AH1*
		HUM 115 - World Mythology: GT-AH2*
		HUM 121 - Humanities: Early Civilization : GT-AH2*
		LIT 115 - Introduction to Literature I: GT-AH2*
		MUS 120 - Music Appreciation: GT-AH1*
		PHI 111 - Introduction to Philosophy: GT-AH3*
	_	SPA 211 - Spanish Language III: GT-AH4
	5	CHE 101 - Introduction to Chemistry I with Lab: GT-SC1
	5	PHY 111 - Physics: Algebra-Based I with Lab: GT-SC1
	3	SOC 101 - Introduction to Sociology I: GT-SS3



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Math & Sci	ences Pathw	60 Credits	Catalog Year: 2020/2021
Year 2: Spring	Credits	Course	
	3	Arts / Humanities GT-AH1-AH4	
		~Recommended Arts / Humanities Course(s)~	
		ART 112 - Art History Renaissance to Modern: GT-AH1*	
		HUM 122 - Humanities: Medieval Modern: GT-AH2*	
		HUM 123 - Humanities: Modern World: GT-AH2*	
		MUS 125 - History of Jazz: GT-AH1*	
		PHI 112 - Ethics: GT-AH3*	
		PHI 113 - Logic: GT-AH3*	
		PHI 218 - Environmental Ethics: GT-AH3*	
	5	BIO 208 - General College Microbiology	
	4	FER 203 - Fermented Foods Sciences	
	3	Social / Behavioral Science GT-SS1-SS3	
		~Recommended Social / Behavioral Science Course(s)~	
		COM 220 - Intercultural Communication: GT-SS3*	
		ECO 201 - Principles of Macroeconomics: GT-SS1*	
		ECO 245 - Environmental Economics	
		GEO 105 - World Regional Geography: GT-SS2*	
		JOU 105 - Introduction to Mass Media: GT-SS3*	

PSY 101 - General Psychology I: GT-SS3*

SOC 231 - The Sociology of Deviant Behavior: GT-SS3*



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RECOMMENDED COURSE SEQUENCE PART-TIME TRACK

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Year 1: Fall	Credits	Course
	3	ENG 121 - English Composition I: GT-CO1
	4	MAT 121 - College Algebra: GT-MA1 or Higher
Year 1: Spring	Credits	Course
	5	CHE 101 - Introduction to Chemistry I with Lab: GT-SC1
	3	ENG 122 - English Composition II: GT-CO2
Year 1: Summer	Credits	Course
	5	BIO 111 - General College Biology I with Lab: GT-SC1
	3	COM 115 - Public Speaking
Year 2: Fall	Credits	Course
	4	FER 101 - Craft Beer Brewing
	3	SOC 101 - Introduction to Sociology I: GT-SS3
Year 2: Spring	Credits	Course
1 0	3	Arts / Humanities GT-AH1-AH4
		~Recommended Arts / Humanities Course(s)~
		ART 110 - Art Appreciation GT-AH1*
		HUM 115 - World Mythology: GT-AH2*
		HUM 121 - Humanities: Early Civilization : GT-AH2*
		LIT 115 - Introduction to Literature I: GT-AH2* MUS 120 - Music Appreciation: GT-AH1*
		PHI 111 - Introduction to Philosophy: GT-AH3*
		SPA 211 - Spanish Language III: GT-AH4
	5	BIO 208 - General College Microbiology
Year 2: Summer	Credits	Course
	3	History GT-HI1
		~Recommended History Course(s)~
		HIS 101 - Western Civilization: Antiquity-1650: GT-HI1*
		HIS 102 - Western Civilization: 1650-Present: GT-HI1* HIS 111 - The World: Antiquity-1500: GT-HI1*
		HIS 112 - The World: 1500-Present: GT-HI1*
		HIS 121 - U.S. History to Reconstruction*
		HIS 225 - Colorado History: GT-HI1*
		HIS 247 - 20th Century World History: GT-HI1*
	3	Social / Behavioral Science GT-SS1-SS3
		~Recommended Social / Behavioral Science Course(s)~ COM 220 - Intercultural Communication: GT-SS3*
		ECO 201 - Principles of Macroeconomics: GT-SS1*
		ECO 245 - Environmental Economics
		GEO 105 - World Regional Geography: GT-SS2*
		JOU 105 - Introduction to Mass Media: GT-SS3*
		DCV 4.04 C D - - - CT CC2*
		PSY 101 - General Psychology I: GT-SS3*
		SOC 231 - The Sociology of Deviant Behavior: GT-SS3*



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Year 3: Fall	Credits	Course
	3	Arts / Humanities GT-AH1-AH4
		~Recommended Arts / Humanities Course(s)~
		ART 112 - Art History Renaissance to Modern: GT-AH1*
		HUM 122 - Humanities: Medieval Modern: GT-AH2*
		HUM 123 - Humanities: Modern World: GT-AH2*
		MUS 125 - History of Jazz: GT-AH1*
		PHI 112 - Ethics: GT-AH3*
		PHI 113 - Logic: GT-AH3*
		PHI 218 - Environmental Ethics: GT-AH3*
	5	PHY 111 - Physics: Algebra-Based I with Lab: GT-SC1
Year 3: Spring	Credits	Course
	3	CIS 115 or CIS 118
		~Recommended Course(s)~
		CIS 118 - Intro to PC Applications
	1	Elective
		~Recommended Elective(s)~
		CHE 111 - General College Chemistry I with Lab: GT-SC1*
		ECO 201 - Principles of Macroeconomics: GT-SS1*
		ECO 202 - Principles of Microeconomics: GT-SS1*
		ECO 245 - Environmental Economics
		GEO 111 - Physical Geography: Landforms with Lab: GT-SC1*
		GEY 111 - Physical Geology w/Lab: GT-SC1*
		MAT 135 - Introduction to Statistics: GT-MA1*
	4	FER 203 - Fermented Foods Sciences