

# FERMENTATION (FMT)

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## FMT 140. Introduction to Fermentation. (4 Credits)

A. Prerequisites: completion of all academic readiness requirements. Course will provide an introduction to chemical and biological concepts as it relates to the production of desirable beverages and other products through biochemical pathways of microorganisms typically used (for fermentation process). 3 Lec/ 3 Lab.

### View Course Learning Outcomes

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## FMT 343. Fermentation Microbiology. (3 Credits)

A. Prerequisites: FMT 140 (C). Course demonstrates the biochemistry, genetics, and behavior of microorganisms for the production of fermented beverages. 2 Lec/ 3 Lab. Credit will not be awarded for both FMT 343 and 540.

### View Course Learning Outcomes

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## FMT 344. Chemical Analysis & Quality Control. (4 Credits)

A. Prerequisite: FMT 140 (C) and ACT math score of 22+ or SAT math score of 530+ or MAT 112B (C) or higher. Course focuses on quality assurance and control (QA/QC) based on analysis using chemical and instrumental methods of initial feedstocks, water, and fermentation products. Analysis will be based in current industrial standards. 3Lec/ 3 Lab.

### View Course Learning Outcomes

1. {}

## FMT 345. Sensory Analysis. (2 Credits)

Prerequisite: FMT 140 (C) and age requirement of 21 and over. Basic principles involved in sensory perception pertaining to neurochemistry and practical sensory experience with products generated from fermentation process. 1 LEC/2 LAB.

### View Course Learning Outcomes

1. {}

## FMT 349. Applied Learning in Fermentation Science. (0.5-8 Credits)

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

### View Course Learning Outcomes

1. {}

## FMT 349A. Cooperative Study: Fermentation Science. (0.5-8 Credits)

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

### View Course Learning Outcomes

1. {}

## FMT 349B. Cooperative Study: Fermentation Science. (0.5-8 Credits)

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

### View Course Learning Outcomes

1. {}

## FMT 349C. Cooperative Study: Fermentation Science. (0.5-8 Credits)

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

### View Course Learning Outcomes

1. {}

## FMT 349D. Cooperative Study: Fermentation Science. (0.5-8 Credits)

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

### View Course Learning Outcomes

1. {}

**FMT 349E. Cooperative Study: Fermentation Science. (0.5-8 Credits)**

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

**View Course Learning Outcomes**

1. {}

**FMT 349F. Cooperative Study: Fermentation Science. (0.5-8 Credits)**

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

**View Course Learning Outcomes**

1. {}

**FMT 349G. Cooperative Study: Fermentation Science. (0.5-8 Credits)**

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

**View Course Learning Outcomes**

1. {}

**FMT 349H. Cooperative Study: Fermentation Science. (0.5-8 Credits)**

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

**View Course Learning Outcomes**

1. {}

**FMT 349I. Cooperative Study: Fermentation Science. (0.5-8 Credits)**

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

**View Course Learning Outcomes**

1. {}

**FMT 349J. Cooperative Study: Fermentation Science. (0.5-8 Credits)**

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

**View Course Learning Outcomes**

1. {}

**FMT 349K. Cooperative Study: Fermentation Science. (0.5-8 Credits)**

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

**View Course Learning Outcomes**

1. {}

**FMT 349L. Cooperative Study: Fermentation Science. (0.5-8 Credits)**

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

**View Course Learning Outcomes**

1. {}

**FMT 349M. Cooperative Study: Fermentation Science. (0.5-8 Credits)**

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

**View Course Learning Outcomes**

1. {}

**FMT 349N. Cooperative Study: Fermentation Science. (0.5-8 Credits)**

Prerequisite: FMT 140 (C) and departmental approval. Independent investigations and study related to academic studies in fermentation science and based in a laboratory setting. One half to eight hours credit per semester or summer. A minimum of 80 hours of employment required for each semester hour of academic credit. May be repeated for a maximum of 12 credit hours but only three hours may be counted towards the major requirements.

**View Course Learning Outcomes**

1. {}

**FMT 495. Fermentation Research. (1-3 Credits)**

A. Prerequisites: FMT 340 (C) and departmental approval. Students concentrate on the objectives and techniques of fermentation science research to address a variety of issues / problems in all aspects of the field. May be retaken to a maximum of six hours but only three hours can count towards a degree. Student must have the independent study proposal form approved by faculty supervisor and departmental chair prior to enrollment. 3-9 Lab.

**View Course Learning Outcomes**

1. {}

**FMT 501A. Special Topics in Fermentation:\_\_\_\_. (1-3 Credits)**

A. Prerequisite: Senior standing and departmental approval. Lecture or laboratory experience to be chosen from current and/or specialized area of fermentation science including (but not limited to) historical aspects, advanced methods of analysis, or facility building. Topics will vary according to student interests and needs. May be retaken to a maximum of six hours. If a laboratory course, then three contact hours will be required for every credit hour.

**View Course Learning Outcomes**

1. {}

**FMT 501B. Special Topics in Fermentation:\_\_\_\_. (1-3 Credits)**

A. Prerequisite: Senior standing and departmental approval. Lecture or laboratory experience to be chosen from current and/or specialized area of fermentation science including (but not limited to) historical aspects, advanced methods of analysis, or facility building. Topics will vary according to student interests and needs. May be retaken to a maximum of six hours. If a laboratory course, then three contact hours will be required for every credit hour.

**View Course Learning Outcomes**

1. {}

**FMT 501C. Special Topics in Fermentation:\_\_\_\_. (1-3 Credits)**

A. Prerequisite: Senior standing and departmental approval. Lecture or laboratory experience to be chosen from current and/or specialized area of fermentation science including (but not limited to) historical aspects, advanced methods of analysis, or facility building. Topics will vary according to student interests and needs. May be retaken to a maximum of six hours. If a laboratory course, then three contact hours will be required for every credit hour.

**View Course Learning Outcomes**

1. {}

**FMT 501D. Special Topics in Fermentation:\_\_\_\_. (1-3 Credits)**

A. Prerequisite: Senior standing and departmental approval. Lecture or laboratory experience to be chosen from current and/or specialized area of fermentation science including (but not limited to) historical aspects, advanced methods of analysis, or facility building. Topics will vary according to student interests and needs. May be retaken to a maximum of six hours. If a laboratory course, then three contact hours will be required for every credit hour.

**View Course Learning Outcomes**

1. {}

**FMT 549. Fermentation Project Lab. (2 Credits)**

Prerequisites: Senior standing, FMT 343 (C), and 344 (C). Age requirement (>21 years). Course to perform an independent capstone project where students will decide on the process to make a final fermentation product. Complete analysis of the product will also be performed at different stages of production. 1 Lec / 3 Lab.

**View Course Learning Outcomes**

1. {}

**FMT 701A. Fermentation in Special Topics. (1-3 Credits)**

A. Prerequisite: Senior standing and departmental approval. Lecture or laboratory experience to be chosen from current and/or specialized area of fermentation science including (but not limited to) historical aspects, advanced methods of analysis, or facility building. Topics will vary according to student interests and needs. May be retaken to a maximum of six hours. If a laboratory course, then three contact hours will be required for every credit hour.

**View Course Learning Outcomes**

1. {}

**FMT 701B. Fermentation in Special Topics. (1-3 Credits)**

A. Prerequisite: Senior standing and departmental approval. Lecture or laboratory experience to be chosen from current and/or specialized area of fermentation science including (but not limited to) historical aspects, advanced methods of analysis, or facility building. Topics will vary according to student interests and needs. May be retaken to a maximum of six hours. If a laboratory course, then three contact hours will be required for every credit hour.

**View Course Learning Outcomes**

1. {}

**FMT 701C. Special Topics in Fermentation. (1-3 Credits)**

A. Prerequisite: Senior standing and departmental approval. Lecture or laboratory experience to be chosen from current and/or specialized area of fermentation science including (but not limited to) historical aspects, advanced methods of analysis, or facility building. Topics will vary according to student interests and needs. May be retaken to a maximum of six hours. If a laboratory course, then three contact hours will be required for every credit hour.

**View Course Learning Outcomes**

1. {}

**FMT 701D. Special Topics in Fermentation. (1-3 Credits)**

A. Prerequisite: Senior standing and departmental approval. Lecture or laboratory experience to be chosen from current and/or specialized area of fermentation science including (but not limited to) historical aspects, advanced methods of analysis, or facility building. Topics will vary according to student interests and needs. May be retaken to a maximum of six hours. If a laboratory course, then three contact hours will be required for every credit hour.

**View Course Learning Outcomes**

1. {}

**FMT 749. Fermentation Project Lab. (2 Credits)**

A. Prerequisites: FMT 540 or 740 (C or better) and 545 or 745 (C or better). Age requirement (>21 years). Course to perform an independent capstone project where students will decide on the process to make a final fermentation product. Complete analysis of the product will also be performed at different stages of production. 1 Lec / 3 Lab.

**View Course Learning Outcomes**

1. {}