

Course Outline (Higher Education)

School: School of Health and Life Sciences

Course Title: YEAST AND FERMENTATION

Course ID: SCBRW5083

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): (SF482)

ASCED Code: 019905

Description of the Course :

This course will describe the processes which occur during the fermentation of beer and related products. Topics to be covered include: yeast characteristics, requirements, maintenance, propagation and handling; fermenter design and operation; and fermentation biochemistry and flavour formation pathways.

Grade Scheme: Graded (HD, D, C, etc.)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks..

Program Level:

AQF Level of Program						
	5	6	7	8	9	10
Level						
Introductory	■	■	■	■	■	■
Intermediate	■	■	■	✓	■	■
Advanced	■	■	■	■	■	■

Learning Outcomes:

Knowledge:

- K1.** Describe each of the various aspects of yeast management / husbandry in a brewery.
- K2.** Describe the biochemical processes occurring during fermentation.

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- K3.** Compare and contrast the variety of fermentation processes and equipment available.
- K4.** Compare and contrast fermentation conditions and the resulting effects on the sensory attributes of the final beer.

Skills:

- S1.** Evaluate the cell count, viability and vitality of yeast cells.
- S2.** Analyse and assess fermentation data and profiles.
- S3.** Competently communicate with scientific staff via technical reports.

Application of knowledge and skills:

- A1.** Develop procedures for fermentation management and control.
- A2.** Effectively and efficiently access and evaluate scientific information relevant to brewing.

Course Content:

The following material will be normally presented during this course.

Topics may include:

- Yeast management / husbandry including: maintenance, propagation, handling and storage, viability and vitality.
- Fermentation Biochemistry including: yeast flocculation, nutrition, metabolic and flavour formation pathways.
- Fermentation management and control including: design and operation of fermenters, monitoring of fermentations, growth kinetics, etc.

Values:

- V1.** To develop a responsible attitude to the production and consumption of alcoholic beverages.
- V2.** To develop an awareness of the differences in cultural beliefs about alcoholic beverages.

Graduate Attributes:

FedUni graduate attributes statement. To have graduates with knowledge, skills and competence that enable them to stand out as critical, creative and enquiring learners who are capable, flexible and work ready, and responsible, ethical and engaged citizens.

Attribute	Brief Description	Focus
Knowledge, skills and competence	Skills to find and interpret information independently.	High
Critical, creative and enquiring learners	Independent learning.	High
Capable, flexible and work ready	The role of alcoholic beverages in society.	Low
Responsible, ethical and engaged citizens	Safety in the working environment.	Low

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1-K4, S1-S3, A2	Tutorial questions - short answers to technical questions covering all aspects of yeast and fermentation.	Tutorial questions.	30-50%

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Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
S1-S3, A1-A2 and any of K1-K4	Case study - an assignment requiring analysis and / or development of fermentation monitoring data / protocols.	Assignment.	20-40%
K1-K4, A2	On-line multiple choice tests.	On-line tests.	20-30%

Adopted Reference Style:

Australian