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**國立高雄科技大學**  
**NATIONAL KAOHSIUNG**  
**UNIVERSITY OF SCIENCE**  
**AND TECHNOLOGY**  
**授課大綱 Syllabus**

部別：日間部四技

112學年度第2學期

列印日期：2024/03/06

中文課程名稱：食品發酵學實務	英文課程名稱：Practices in Food Fermentation	授課教師：SHARMA VISHAL
開課班級：日四技水食四甲	學分：2.0	授課時數：2.0
合班班級：日四技水食四乙		實習時數：0.0

**1. 中文教學目標(Chinese Teaching objectives)**

課程目標涵蓋一系列知識、技能和實際應用。目標旨在讓學生深入了解發酵工程及其多樣化應用。全面了解發酵技術並培養正確的科學學習態度。建立進行發酵技術相關科學研究的基本知識和技能。

**2. 英文教學目標(English Teaching objectives)**

The course objectives encompass a range of knowledge, skills, and practical applications. The objectives aim to give the students a deep understanding of fermentation engineering and its diverse applications. To Gain a comprehensive understanding of fermentation technology and develop an appropriate attitude toward scientific learning. Establish the basic knowledge and skills to conduct scientific research related to fermentation technology.

**3. 中文教學綱要(Chinese CourseDescription)**

全面了解發酵過程、其工程原理及其在各行業的應用。了解發酵知識的基本原理，包括酵母和發酵機制。探索酵母在發酵中的應用以及各種工業環境中反應的最佳化。了解發酵工程的原理，包括為特定工業應用選擇酵母。

**4. 英文教學綱要(English CourseDescription)**

To provide a comprehensive understanding of fermentation processes, their engineering principles, and their applications in various industries. Understand the basic principles of fermentation knowledge, including yeast and ferment mechanisms. To Explore of yeast into fermentation and the optimization of reactions in various industrial settings. Learn the principles of fermentation engineering, including the select of yeast for specific industrial applications.

**5. 中文核心能力**

	核心能力名稱	核心能力百分比
1	水產食品知能	5%
2	食品加工知能	5%
3	食品生物科技	5%
4	食品品管檢驗知能	5%
5	資訊整合	5%
6	語言知能	30%
7	整合創新	15%
8	適應社會	10%
9	溝通協調能力	10%

10 服務管理	10%
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## 6. 英文核心能力

核心能力名稱	核心能力百分比
1 Knowledge of aquatic foods	5%
2 Knowledge of food processing	5%
3 Food biotechnology	5%
4 Knowledge of food quality inspections	5%
5 Information integration	5%
6 Knowledge of language	30%
7 Integrated innovation	15%
8 Social adaptation	10%
9 Communication and coordination skills	10%
10 Service management	10%

無教科書資料。

無參考書資料。

## 9. 教學進度表

週次或項目 Week or Items	中文授課內容 Chinese Course Content	英文授課內容 English Course Content	分配節次 Assigned Classes	備註 Note
1	食品發酵簡介：食品發酵的定義與重要性；歷史的角度	Introduction to Food Fermentation: Definition and importance of food fermentation; Historical perspective	2	
2	參與發酵的微生物	Microorganisms involved in fermentation	2	
3	發酵在食品保存與風味發展中的作用	Role of fermentation in food preservation and flavor development	2	
4	發酵微生物學：發酵中的微生物多樣性；發酵動力學	Microbiology of Fermentation: Microbial diversity in fermentation; Fermentation kinetics	2	
5	酵素在發酵中的作用；發酵劑及其選擇	Role of enzymes in fermentation; Starter cultures and their selection	2	

6	發酵製程：分批發酵、補料 分批發酵及連續發酵；影響 發酵過程的因素（溫度、 pH、氧氣等）	Fermentation Processes: Batch, fed-batch, and continuous fermentation; Factors influencing fermentation processes (temperature, pH, oxygen, etc.)	2
7	固態發酵與深層發酵	Solid-state fermentation vs. submerged fermentation	2
8	發酵飲料：啤酒和葡萄酒生 產；果汁發酵	Fermented Beverages: Beer and wine production; Fermentation of fruit juices	2
9	期中考	Mid-Term examination	2
10	乳製品發酵：優格生產；乳 酪生產；發酵乳製品	Dairy Fermentation: Yogurt production; Cheese production; Fermented milk products	2
11	不同文化的發酵食品：酸菜 和泡菜 發酵豆製品（味噌、豆 豉）；發酵魚製品	Fermented Foods from Various Cultures: Sauerkraut and kimchi Fermented soy products (miso, tempeh); Fermented fish products	2
12	發酵食品的品質控制與分 析：監測發酵過程；發酵產 品的感官評價	Quality Control and Analysis of Fermented Foods: Monitoring fermentation processes; Sensory evaluation of fermented products	2
13	發酵過程中的食品安全考慮	Food safety considerations in fermentation	2
14	現代發酵分析技術：微生物 鑑定的分子方法	Modern Analytical Techniques in Fermentation: Molecular methods for microbial identification	2
15	生物加工與下游加工：發酵 產品的回收與純化；過濾、 色譜和其他分離技術	Bioprocessing and Downstream Processing: Recovery and purification of fermented products; Filtration, chromatography, and other separation techniques	2
16	發酵食品的調配與包裝	Formulation and packaging of fermented	2

		foods	
17	發酵分析中的代謝組學和蛋白質組學	Metabolomics and proteomics in fermentation analysis	2
18	期末考	Final Examination	2

#### 10. 中文成績評定(Chinese Evaluation method)

出席、測驗、課後作業和期中/期末考試

#### 11. 英文成績評定(English Evaluation method)

Attendance, quiz, homework, and the mid-/final- exams

#### 12. 中文課堂要求(Chinese Classroom requirements)

投影機/線上教學設置

#### 13. 英文課堂要求(English Classroom requirements)

Projector/online teaching setup

無SDGs相關項目。(No SDGs Data.)

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