

## CENG1800 Introduction to Food Science & Technology, 2026

**Instructor:** Marshal LIU      Office: 4551, Tel: 2358 8409 Email: [keysliu@ust.hk](mailto:keysliu@ust.hk)

**TAs:** tbc

### **Class Schedule:**

Blended learning: Online lectures and quizzes will be announced in due time.

Lecture / tutorial: 16-JUNE - 09-JULY      Tu Th 10AM - 1250AM Room 4582

Lab 1: 2-550PM, Tue      Lab 2: 2-550pm, Thu      Rm6016, CYT Bldg,

### **Learning Outcomes:**

1. Explain the roles of major nutrients and chemical components in meeting nutritional needs.
2. Describe principles and methods used in food processing, preservation, and production.
3. Analyze the importance of safe, sustainable, and economical practices in food technology.
4. Evaluate food industry challenges and propose solutions considering regulatory, environmental, and socioeconomic factors.
5. Apply food processing techniques through practical experiments.
6. Design innovative food products, processes, or facilities prioritizing safety, sustainability, etc.

### **Assessment:**

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

| Components                                     | Mapped LOs | Weighting | Due time           |
|------------------------------------------------|------------|-----------|--------------------|
| Class participation and performance            | 1, 2       | 10%       | Every class        |
| Online quizzes                                 | 1, 2, 3    | 10%       | Before every class |
| Two written quizzes                            | 1,2,3,4,6  | 40%       | Week 2&4           |
| Lab performance and two lab reports            | 4,5,6      | 30%       | Week 2, 3, 4       |
| Group project (5 min presentation + 5 min Q&A) | 4, 5, 6    | 10%       | Week 4             |

### **Lab session:**

- A total of 6 experiments (two experiments for each week).
- Every student submits two short reports (max 5 pages), within one week after finishing the experiment and obtaining data.
- A group comprises 4 students from different departments. Form your own group in the first class, and TA will help assign afterwards.

## Lab schedule

|                 |            |            |
|-----------------|------------|------------|
| June 16&18:     | 1A: Bread  | 1B: Jelly  |
| June 23&25:     | 2A: Beer   | 2B: Cookie |
| June 30& Jul 2: | 3A: Yogurt | 3B: Tofu   |

## Rubrics of lab report:

| Dimensions and weight                                      | Poor (0–4 pts)                                                                                                 | Satisfactory (4–7 pts)                                                                                       | Exemplary (7–10 pts)                                                                                                                               |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Report Structure & Presentation<br>(20%)                | Missing required sections or key information; poor organization or formatting; difficult to follow.            | All required sections included with generally clear organization; minor formatting or clarity issues.        | Well-organized, professional presentation; all required sections complete, clear, and within guidelines.                                           |
| 2. Introduction, Objectives & Experimental Design<br>(20%) | Background and objectives are unclear or incomplete; procedure poorly explained or shows little understanding. | Provides basic background and objectives; procedure adequately described but lacks insight or visualization. | Clear and concise background; well-defined objectives; procedure thoughtfully explained, showing understanding of experimental design.             |
| 3. Results & Scientific Interpretation<br>(40%)            | Results poorly presented or inaccurate; minimal interpretation; weak or incorrect linkage to theory.           | Results presented clearly with basic interpretation; some connection to food science concepts and theory.    | Results are accurate, well-presented, and critically interpreted; strong linkage to theory, errors, and implications (e.g. safety, cost, culture). |
| 4. Conclusions, References & Communication<br>(20%)        | Conclusions unsupported by data; references missing or unreliable; language hinders understanding.             | Conclusions generally supported by results; appropriate references with minor issues; mostly clear writing.  | Concise, data-driven conclusions; credible and well-cited references; clear, professional scientific writing throughout.                           |

## Rubrics of project:

| Dimensions and weight | Poor (0-4 points)                               | Satisfactory (4-7 points)                                       | Exemplary (7-10 points)                                                                     |
|-----------------------|-------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Objective, 10%        | Define the scope of the work poorly or vaguely. | Clearly identifies the central goals, but sometimes may digress | Effectively describes and explains the central goals; explanation is focused and compelling |

|                                                           |                                                                                                                                                                           |                                                                                                                                                                       |                                                                                                                                                                  |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Introduction and experimental design, 30%                 | <p>Fails to provide an overview.</p> <p>Poor experiment design may not help to investigate the question.</p>                                                              | <p>Provides an adequate overview of the work.</p> <p>Experiment design helps to investigate the question, with minor error.</p>                                       | <p>Provides a thorough overview.</p> <p>Experiment is well designed to investigate the question.</p>                                                             |
| Data analysis & discussion and conclusion, 50%            | <p>Data is insufficient or information is unreliable.</p> <p>Discussion on the results and abnormality is inadequate and confusing.</p> <p>Poor summary of the topic.</p> | <p>Most data is presented and discussed appropriately, with some mistakes.</p> <p>Most results are examined critically and summarized clearly with minor omission</p> | <p>Presents reliable/correct data and provides in depth discussion</p> <p>Examine results critically and creatively, with a complete and concise conclusion.</p> |
| Structure, formatting, grammar & Spelling, citations, 10% | <p>Poor format, illogical organization, frequent grammar /spelling errors.</p> <p>Does not cite sources.</p>                                                              | <p>Consistent formatting and logical structure.</p> <p>Most data is cited clearly. Some errors.</p>                                                                   | <p>Professional formatting and well organized. Complete and consistent citation. Very few errors</p>                                                             |

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## Course AI Policy

Generative artificial intelligence can be used in reports and projects, but not allowed in the written quizzes.

## Reference:

- 1) Vaclavik, Vickie A. & Christian, Elizabeth W. Essentials of Food Science, 3<sup>rd</sup> edition, Springer, 2014 E-book
- 2) Shewfelt, Robert L., Boca Raton. Introducing Food Science. CRC press, 2009,
- 3) McWilliams, Margaret. Food Fundamentals, 10<sup>th</sup> edition, Pearson, 2013,
- 4) Fellows PJ. Food Processing Technology - Principles and Practice (3rd Ed.). Woodhead Publishing, 2009 E-book.