

## COURSE CONTENT

<b>Academic Year</b>	2023/2024	<b>Semester</b>	1
<b>Course Coordinator</b>	Prof. Chen Wei Ning, William		
<b>Course Code</b>	CH5221		
<b>Course Title</b>	Food Industry Seminar Series		
<b>Pre-requisites</b>	NA		
<b>No of AUs</b>	3		
<b>Contact Hours</b>	39 hours lecture		
<b>Proposal Date</b>	11 June 2020		

### Course Aims

This seminar course will introduce you to the Food Industry in Singapore, Asia and beyond. Prominent speakers from various Food MNCs, local SMEs, and regulatory bodies (SFA and/or WHO) will be invited to present every week on various topics and food issues. This will also give you a valuable opportunity to interact personally with food industries and have a deeper understanding of the food policies and issues around the world.

### Intended Learning Outcomes (ILO)

At the end of the course, you should be to:

1. discuss global food issues from the perspectives food MNCs and food regulatory bodies from around the world.
2. identify and recognize important food issues such as:
  - a. Food Security
    - Smart technology for primary production
    - Enhance process in house capabilities
    - Ensure food is safe for consumption
  - b. Food Sustainability
    - Novel technology for prolonged food shelf life
    - Nutrition profiling for healthy lifestyle
  - c. Food Waste Management
    - Food waste conversion to food ingredients
    - Food waste utilization for wider applications

### Course Content

This course aims to raise your awareness of the real world challenges in food industry around the world and in Singapore. Subjects such as food security, food sustainability and food waste management will be the main focus for every week's seminar.

A convergence of factors has made food security one of the most important global issues. An increasing population wants a more varied diet, but is trying to grow more food on less land with limited access to water, all the time facing increased costs for fertiliser, and fuel for storage and transport.

Even after food is grown, stored and transported, serious losses can occur, and in developing nations where 'plentiful' food is wasted. A review of food waste in the US calculated that around 20% of the amount available to consume, was lost from retailing onwards. This translate to 20% of the land, water, labour, seed, pesticide and fertiliser are wasted in the process and thus this is also a financial and environmental loss too.

In view of the growing world population and thus a growing demand in food, most of the food produced today is reflective of an unsustainable food system. This food is dependent on foreign oil, is destroying soil, contaminates water, has caused disease outbreaks, and may be robbing our future generations of the ability to grow food at all.

Specific content includes (note may change over time):

- a. Food Security
  - Smart technology for primary production
  - Enhance process in house capabilities
  - Ensure food is safe for consumption
- b. Food Sustainability
  - Novel technology for prolonged food shelf life
  - Nutrition profiling for healthy lifestyle
- c. Food Waste Management
  - Food waste conversion to food ingredients
  - Food waste utilization for wider applications

**Assessment (includes both continuous and summative assessment)**

Component	Course LO Tested	Related Programme LO or Graduate Attributes	Weighting	Team /Individual	Assessment rubrics
1. Weekly Essays/ Assignments	1,2,3	a, b, l	20%	Individual	Appendix 1
2. Mid-term Project/ Presentation	1,2	a, b, f, g, i, j, l	40%	Group	Appendix 2
3. Final Project/ Presentation	3	a, b, f, g, i, j, l	40%	Group	Appendix 2
Total			100%		

**Mapping of Course ILOs to EAB Graduate Attributes**

Course Intended Learning Outcomes	Cat	EAB's 12 Graduate Attributes*											
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
	Core	●	●				●	●		●	●		●
1. discuss global food issues from the perspectives food MNCs and food regulatory bodies from around the world.													
2. identify and recognize important food issues													

Legend:

● Fully consistent (contributes to more than 75% of Intended Learning Outcomes)

● Partially consistent (contributes to about 50% of Intended Learning Outcomes)

○ Weakly consistent (contributes to about 25% of Intended Learning Outcomes)

Blank Not related to Student Learning Outcomes

**Formative feedback**

*Weekly Assignments and presentation performances will be discussed in class.*

**Learning and Teaching approach**

<b>Approach</b>	<b>How does this approach support students in achieving the learning outcomes?</b>
Lecture	Industry speakers will be sharing with you on real world challenges in food industry around the world and in Singapore. Students have the opportunity to participate in class and discuss real case studies. Through project discussions and class participations, they have deeper understanding of the global food issues.

**Reading and References**

Reference to Speakers 1 to 6 notes and case studies

**Course Policies and Student Responsibilities**

General: You are expected to complete all online activities and take all scheduled assignments and tests by due dates. You are expected to take responsibility to follow up with course notes, assignments and course related announcements. You are expected to participate in all tutorial discussions and activities.

Continuous assessments: You are required to attend all continuous assessments.

Absenteeism: Continuous assessments make up a significant portion of your course grade. Absence from continuous assessments without officially approved leave will result in no marks and affect your overall course grade.

Attendance of the mid-term exam by all students is expected. Only students proven medically unfit may be excused from the mid-term exam. In this case, there will be no make-up exam. Mark weighting will be transferred to the final exam.

**Academic Integrity**

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the [academic integrity website](#) for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

**Course Instructors**

<b>Instructor</b>	<b>Office Location</b>	<b>Phone</b>	<b>Email</b>
Chen Wei Ning, William	N1.2-B1-07	63162870	<a href="mailto:wuchen@ntu.edu.sg">wuchen@ntu.edu.sg</a>

**Planned Weekly Schedule**

<b>Week</b>	<b>Topic</b>	<b>Course LO</b>	<b>Readings/ Activities</b>
1	Speaker 1: Presentation on Food Security	1, 2a	Reference to Speaker 1's case study and notes
2	Speaker 1: Presentation on Food Security	1, 2a	Reference to Speaker 1's case study and notes
3	Speaker 2: Presentation on Food Security	1, 2a	Reference to Speaker 2's case study and notes
4	Speaker 2: Presentation on Food Security	1, 2a	Reference to Speaker 2's case study and notes
5	Speaker 3: Presentation on Food Sustainability	1, 2b	Reference to Speaker 3's case study and notes
6	Speaker 3: Presentation on Food Sustainability	1, 2b	Reference to Speaker 3's case study and notes
7	<b>Mid-term Project Presentations</b>	1, 2a	Reference to Speaker 1 to 3's case study and notes
8	Speaker 4: Presentation on Food Sustainability	1, 2b	Reference to Speaker 4's case study and notes
9	Speaker 5: Presentation on Food Waste Management	1, 2c	Reference to Speaker 5's case study and notes
10	Speaker 5: Presentation on Food Waste Management	1, 2c	Reference to Speaker 5's case study and notes
11	Speaker 6: Presentation on Food Waste Management	1, 2c	Reference to Speaker 6's case study and notes
12	Speaker 6: Presentation on Food Waste Management	1, 2c	Reference to Speaker 6's case study and notes
13	<b>Final Project Presentations</b>	1, 2b, 2c	Reference to Speaker 4 to 6's case study and notes

## Appendix 1: Assessment Criteria for Weekly Assignments

<u>Criteria</u>	<u>Does Not Meet Expectation (&lt;40%)</u>	<u>Below Expectation (40% to 49%)</u>	<u>Meet Expectation (50%-79%)</u>	<u>Exceed Expectation (&gt;80%)</u>
<b>Report – Introduction on Background (5%)</b>	No introduction of the background	No clear introduction of the background and objectives of the report is missing	Introduction states the background and preview the objectives of the report	Introduction states the background and provided clear and well defined objectives of the report
<b>Report – Approaches or Mitigation Measures (20%)</b>	The approaches described are either not suited and not feasible	The approaches identified are appropriate but details are largely incomplete	The approaches identified are appropriate but some details are missing	The approaches identified are well defined and provides good justifications on how to tackle the problem.
<b>Report – Conclusions and References (5%)</b>	No conclusion and no references done	Conclusion are incomplete and no references done	Conclusion are adequate and provided some citations and references	Conclusion are clear and concise. Provided proper and well-formatted in-text citations and the list of references

## Appendix 2: Assessment Criteria for Mid-Term and Final Presentation

Please note that the instructor would ask you individually on your and your team mates' participation in the project. Your score may vary from your team mates should there be sufficient evidence that you did not contribute to the team.

<u>Criteria</u>	<u>Does Not Meet Expectation</u> (<40%)	<u>Below Expectation</u> (40% to 49%)	<u>Meet Expectation</u> (50%-79%)	<u>Exceed Expectation</u> (>80%)
<b>Presentation skills – Teamwork (15%)</b>	Presentation does not sufficiently present the topic.	Presentation describes the topic.	Presentation describes the topic.	Presentation thoroughly and concisely presents the topic.
<b>Slide Content (20%)</b>	Content arrangement is somewhat confusing and does not adequately assist the viewer in understanding order without narration	Content arrangement is somewhat confusing and does not adequately assist the viewer in understanding order without narration	Content is arranged so that the viewer can understand order without narration	Content is clearly arranged so that the viewer can understand order without narration
<b>Visual Presentation (5%)</b>	Not very visually appealing; cluttered; colors and patterns hinder readability	Somewhat cluttered; colors and patterns detract from readability	Overall visually appealing; not cluttered; colors and patterns support readability	Overall visually appealing; not cluttered; colors and patterns enhance readability

### Appendix 3: The EAB (Engineering Accreditation Board) Accreditation SLOs (Student Learning Outcomes)

- a) **Engineering knowledge:** Apply the knowledge of mathematics, natural science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems
- b) **Problem Analysis:** Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- c) **Design/development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
- d) **Investigation:** Conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- e) **Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations
- f) **The engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- g) **Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for the sustainable development.
- h) **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- i) **Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.
- j) **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- k) **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and economic decision-making, and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- l) **Life-long Learning:** Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change