



School of Bioinnovation and Bio-based Product Intelligence (SCIN)  
Program in Bioinnovation (International Program, Multidisciplinary Program)  
Course: SCIN 292 Bioinnovation in Food Industry

Degree  Bachelor  Master  Doctoral  
Faculty of Science

<b>Course Code and Course Title</b>	English SCIN 292 Bioinnovation in Food Industry Thai วิชา ๒๙๒ ชีวนวัตกรรมในอุตสาหกรรมอาหาร
<b>Number of Credits</b>	2 (2-0-4)
<b>Curriculum and Course Type</b>	Program of Study Bachelor's Degree Program in Science and Technology (International Program, Multidisciplinary Program) Course Type Major Course
<b>Course Coordinator</b>	Asst. Prof. Siriyupa Netramai, Ph.D Address: School of Bioinnovation and Bio-based Product Intelligent, Faculty of Science, Mahidol University Tel: n/a email: siriyupa.net@mahidol.ac.th
<b>Semester/Year of Study</b>	Academic Year 2021 Second Semester (2/2021) / Second Year
<b>Prerequisite</b>	None
<b>Co-requisite</b>	None
<b>Day/Time/Study Site Location</b>	Thursday / 1.30PM-3.30PM / <b>Online/On campus</b> <b>SC1-159</b> , Faculty of Science, Mahidol University, Salaya Campus / <b>Zoom</b>
<b>Google Classroom Link</b>	<a href="https://classroom.google.com/c/NDO3MDE0NTEzODU5">https://classroom.google.com/c/NDO3MDE0NTEzODU5</a>
<b>Google Classroom Code</b>	qzxsui6
<b>Date of Latest Revision</b>	16 December 2021

### Course Learning Outcomes (CLOs)

After successful completion of this course, students are able to

1. Explain concepts of bio- and food innovation
2. Discuss importance of bio- and food innovation in various aspects related to food industry
3. Apply specific innovation to given problems and/or challenges related to food industry

### Objectives of Development / Revision

To revise for new academic year

### Course Description

Bioinnovation in food industry for better quality of life; food innovation for food security and food safety; food innovation in food industry and related fields; innovation for quality control of raw materials; processing aids in bioprocess production; innovation in food seasoning; food ingredients, bioactive compounds and food molecules; products improvement; biostability of food products; innovation in food bioformulation; important of food innopolis for society and economy (market share, production efficiency, reduce production cost, food-innovation specialist); innovation in law and regulations for bioinnovation in food industry.



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**Credit Hours / Trimester**

Theory (Hours)	Addition Class (Hours)	Laboratory/Field trip/ Internship (Hours)	Self-study (Hours)
30 Hours/Semester (2 Hours x 15 Weeks)	-	-	60 Hours/Semester (4 Hours x 15 Weeks)

**Number of Hours per Week for Individual Advice**

2 hours per week or student requirement during prescribed date and time

**Evaluation of the CLOs**

Course Learning Outcomes	Measurement Method			Weight (%)
	Class Attendance, Participation and Behavior in Class	Written Exam	Class Project	
CLO1 Explain concepts of bio- and food innovation	-	15%	5%	20%
CLO2 Discuss importance of bio- and food innovation in various aspects related to food industry	5%	20%	10%	35%
CLO3 Apply specific innovation to given problems and/or challenges related to food industry	5%	30%	10%	45%
<b>Total</b>	<b>10%</b>	<b>65%</b>	<b>25%</b>	<b>100%</b>

**Measurement and evaluation**

After completion of the evaluation process each student is assigned a criterion-referenced grade (as shown in the table below). Evaluation and achievement will be justifying according to Faculty and University code, conducted by grading system of A, B+, B, C+, C, D and F. To pass this course, student must earn a grade of a least D.

Total Percentage of Evaluation	Below 50	50-54.99	55-59.99	60-64.99	65-69.99	70-74.99	75-79.99	80-100
Grade	F	D	D+	C	C+	B	B+	A



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**Teaching Schedule 2<sup>nd</sup> Semester of Academic Year 2021**

Week	Date	Topic	Number of Hours		Instructor
			Lecture	Laboratory	
1	6 Jan. 2022	- Course introduction - Bioinnovation for health and wellness	2	0	Asst. Prof. Siriyupa Netramai
2	13 Jan. 2022	Innovation for food security and safety	2	0	Asst. Prof. Siriyupa Netramai
3	20 Jan. 2022	Innovation in food- and related industries	2	0	Asst. Prof. Siriyupa Netramai
4	27 Jan. 2022	Sensory research for innovation in food industries	2	0	Asst. Prof. Aussama Soontrunnrudsri
5	3 Feb. 2022	Validation of innovation in food- and related industries	2	0	Asst. Prof. Aussama Soontrunnrudsri
6	10 Feb. 2022	- Innovative flavouring agent, ingredient, bioactive compound, and other food additives and processing aids - Biostability of food product	2	0	Assoc. Prof. Sittiwat Lertsiri
7	17 Feb. 2022		2	0	Asst. Prof. Siriyupa Netramai
8	24 Feb. 2022	Innovative postharvest technology	2	0	Asst. Prof. Hayati Samsudin
<b>Midterm examination (28 Feb. – 4 Mar. 2022)</b>					
10	10 Mar. 2022	Current status of innovation in raw materials: Impact on food industry	2	0	Assoc. Prof. Kanyaratt Supaibulwatana
11	17 Mar. 2022	Quality improvement	2	0	Dr. Thitisilp Kijchavengkul
13	24 Mar. 2022	Innovation for quality control in food industry	4	0	Dr. Thitisilp Kijchavengkul
13	31 Mar. 2022				
14	7 Apr. 2022	- Innovation in food bioformulation	4	0	Asst. Prof. Siriyupa Netramai
15	21 Apr. 2022	- Importance of food innopolis on society and economics			
16	28 Apr. 2022	Law and regulations on bioinnovation in food industry	2	0	Dr. Thitisilp Kijchavengkul
<b>Final examination (10-21 May 2021)</b>					

\* Thursday 1.30PM-3.30PM Online/On campus Faculty of Science, Mahidol University, Salaya Campus

\*\* TBA = To be announced