

## Course Syllabus

- 1. Course Code and Title** ICFS 376 Science of Thai Culinary Arts
- 2. Number of Credits** 4 (3-2-7)  
(Theory 3 hrs. Practice 2 hrs. Self-Study 7 hrs./week)
- 3. Curriculum and Course Type**
- 3.1 Program Food Science and Technology
- 3.2 Course Type Major Elective Course
- 4. Course Coordinator and Instructor**
- 4.1 Course Responsible Instructor Chutamas Jayuutdiskul, Food Science and Technology Program, Science Division, Tel: 02-7005000 ext 3561  
Email: chutamas.jay@mahidol.edu
- 4.2 Instructors Chutamas Jayuutdiskul
- 5. Semester/Class Level**
- 5.1 Semester 1<sup>st</sup> Trimester / Class Level Undergraduate
- 5.2 Number of Students Allowed Approximately 20 Students
- 6. Prerequisites**  
Being 2<sup>nd</sup> year student or higher
- 7. Co-requisites**  
N/A

## 8. Course Description

This course involves Chemical, physical, and microbiological aspects of Thai foods, design and analysis for the sensory evaluation, flavours and flavours pairing, nutraceutical potentials of Thai cuisines; laboratory sessions on techniques of Thai cuisine processing for dishes such as stir-fried, steamed, spicy salads, chilli paste, curry, fermented food, and deserts; scientific explanation behind local wisdoms of these techniques.

## 9. Course Objectives

At the end of this course, students will gain:

- 1) Knowledge about the historical perspective, evolution, and identity of Thai cuisine
- 2) Understanding the scientific rationale behind the ingredients, food preparation techniques, and food product serving with sensorial perception and eating quality of dishes and food product in Thai cuisine
- 3) Exercise of effective communication about science and arts in the area of food topics
- 4) Development of analysing and creative skills in techniques used in Thai-cuisine based food product formulation and its production as well as the emerging technology and innovation in the Thai-cuisine based food product
- 5) Practice in working independently and collaboratively

## 10. Course-level Learning Outcomes: CLOs

On completion of the course, the students will be able to

- 1) CLO1 Understand the historical perspective, evolution, and identity of Thai cuisine to distinguish Thai food cultures from others.
- 2) CLO2 Illustrate the chemical properties of ingredients commonly used in Thai cuisine correctly
- 3) CLO3 Explain the science behind food preparation technique, sensorial attributes and eating quality of dishes and food product in Thai cuisine, food product formulation and its production
- 4) CLO4 Reproduce Thai cuisine dishes and develop the dishes with a concept of Thai-cuisine based food product for wellbeing
- 5) CLO5 Demonstrate ability to present and discuss about scientific perspectives and research combined with the arts of Thai-cuisine based food and the emerging technology and innovation in the Thai-cuisine based food product
- 6) CLO6 Demonstrate good communication in writing and make effective presentation on the developed concept, and formulation of the food product
- 7) CLO7 Perform self-reliance when working independently and display teamwork in group activities

### 11. How to organise learning experiences to develop the knowledge or skills stated in number 2 and how to measure the learning outcomes

CLOs	Teaching and learning experience management					Learning outcomes measurements					
	Lecture	Lab	Group project/report/presentation	Group work	Individual assignment	M C Q	M E Q	Short Answer	Group project/report/presentation	Participation in group work	Individual assignment
CLO1	✓					X		X			
CLO2	✓		✓			X	X	X	X		
CLO3	✓		✓		✓	X	X	X			X
CLO4		✓							X		
CLO5			✓		✓				X		X
CLO6			✓						X		
CLO7		✓	✓	✓						X	

### 12. Lesson Plan

Teaching Period	Topics/Details	Number of hours		Methods: Teaching Media
		Theory*	Practice**	
1	Course introduction; The Thai Food Identity and historical perspective of Thai Cuisine	3		Lecture slides
			2	Lab activities
2	Flavour pairing approach Flavour components and their sources in Thai Cuisine	3		Lecture slides
			2	Lab activities
3	Chemical and functional properties of notable ingredients	3		Lecture slides
			2	Lab activities

4	Scientific principles in Thai cuisine cooking technique	3		Lecture slides
			2	Lab activities
5	"Midterm Review and Assessment (R&A) period" Product formulation project proposal development	2		
		1	2	Group discussion
6	Eating pleasure of Thai meal	3		Lecture: slides
			2	Lab activities
7	Sensory expectation and perception: A case study with Thai desserts	3		Lecture slides, case study and group discussion
			2	Lab activities
8	Gub-Khao Recipes: From past to present, from arts to science	3		Lecture: slides
			2	Lab activities
9	Potential application and innovation in Thai cuisines: Gastronomy: An extended platform for customised nutrition	3		Lecture slides, case study and group discussion
			2	Lab activities
10	Potential application and innovation in Thai cuisines: Bioactive compounds/functional ingredients for Thai-cuisine based food product	3		Lecture slides, case study and group discussion
			2	Lab activities
11	Group product formulation 1 Product formulation, analysing opportunities for development	3	2	Product creation and presentation
12	Group product formulation 2 Product formulation, analysing opportunities for development	3	2	Product creation and presentation
		<b>36</b>	<b>24</b>	

### 13. Plan for Assessment of Expected Course-Level Learning Outcomes (CLOs)

#### 13.1 Measurement and Evaluation of learning achievement

##### A. Formative Assessment

Reflection, self and peer assessment

##### B. Summative Assessment

(1) Tool and weight for measurement and evaluation

Learning Outcomes	Evaluation Method*						Weight (Percentage)
	M C Q	M E Q	Short Answer	Group project/report/presentation	Participation in group work	Individual assignment	
CLO1 Understand the historical perspective, evolution, and identity of Thai cuisine to distinguish Thai food cultures from others.	5		5				<b>10</b>

CLO2 Illustrate the chemical properties of ingredients commonly used in Thai cuisine correctly	5	5	10	5			<b>25</b>
CLO3 Explain the science behind food preparation technique, sensorial attributes and eating quality of dishes and food product in Thai cuisine, food product formulation and its production	5	5	10	5		<b>5</b>	<b>30</b>
CLO4 Reproduce Thai cuisine dishes and develop the dishes with a concept of Thai-cuisine based food product for wellbeing				5			<b>5</b>
CLO5 Demonstrate ability to present and discuss about scientific perspectives and research combined with the arts of Thai-cuisine based food and the emerging technology and innovation in the Thai-cuisine based food product			5	10			<b>15</b>
CLO6 Demonstrate good communication in writing and make effective presentation on the developed concept, and formulation of the food product				5	5		<b>10</b>

CLO7 Perform self-reliance when working independently and display teamwork in group activities						5		5
Total	15	10	30	30	10	5		100

### (2) Grading Rules

Grade	Achievement	Final Score (% Range)	GPA
A	Excellent	90-100	4.0
B+	Very good	85-89	3.5
B	Good	80-84	3.0
C+	Fairy good	75-79	2.5
C	Fair	70-74	2.0
D+	Poor	65-69	1.5
D	Very poor	60-64	1.0
F	Fail	Less than 60	0.0

### (3) Measurement and Evaluation

Refer to (2)

#### 2.2 Re-examination (if the course allows any.)

N/A - (Not applicable)

### 3. Students' Appeal

Upon MUIC policy

## Section 5 Teaching Resources

### 1. Required Texts

1) Sinsawasdi, V. K., Rattanapanone, N., & Toschka, H. Y. (Eds.). (2022). *The Science of Thai Cuisine: Chemical Properties and Sensory Attributes*. CRC Press.

### 2. Suggested Materials

1) Jantathai, S., Sungsi-In, M., Mukprasirt, A., & Duerrschmid, K. (2014). Sensory expectations and perceptions of Austrian and Thai consumers: A case study with six colored Thai desserts. *Food Research International*, 64, 65-73.

2) Spence, C. (2022). Gastrophysics: Getting creative with pairing flavours. *International Journal of Gastronomy and Food Science*, 27, 100433.

3) Spence, C. (2020). Food and beverage flavour pairing: A critical review of the literature. *Food Research International*, 133, 109124.

4) Subhasri, D., Dutta, S., Leena, M. M., Moses, J. A., & Anandharamakrishnan, C. (2022). Gastronomy: An extended platform for customized nutrition. *Future Foods*, 5, 100147.

5) MU library and e-resources