

# Department of Food Science

## Introduction

### History

Department of Food Science of Yuanpei University was accredited by the Ministry of Education in 1991, and started to admit undergraduate students in 2000. After that, a graduate program was approved in 2006. The

success story of the Department already spans for more than two decades. Today, the Food Science is among the most important of Taiwan's foremost organizations of vocational education on food science.



### Features

#### Curriculum

The curriculum content is multidisciplinary, incorporating studies in areas, such as Food processing, food sanitation and safety, food inspection, Food marketing and management courses, Biotechnology in food industry, Functional food developing and evaluation, Food management systems and associated technology.

1. Food technology courses: food processing, food chemistry, food microbiology, sensory evaluation, food packaging, and food additives, etc.
2. Food inspection technological courses: food analysis testing, instrumental analysis, food microbiology, etc.
3. Food marketing and management courses: food regulations and rules, food safety control system (including HACCP), Food marketing, food regulation, and food factory management, etc.
4. Biotechnology in food industry: healthcare food product, fermentation biotechnology, cell culture and animal experiments, food biochemistry, food enzymologist,, etc.

## Faculty

The faculty and staff in the department maintain diverse food processing, food biotechnology and food sanitation and inspection interests, and they are also good at their skill sets with these technologies. The number of full-time teachers at the department is 13 containing 4 professor, 4 associate professors, and 5 assistant professors.

## Facilities

The Department will continuously purchase equipment, such as food processing facilities, analyze equipment, biochemistry and biotechnology equipment, LCD projectors and cameras for the purpose of teaching and seminar discussion. The students will be able to constantly improve food inspection and food processing ability for the need of job market after graduation. In terms of library collection, the Department continues to purchase textbooks and subscribe professional journals related to food science and food inspection services.

## Career Development

In order to meet the nation's need of modernization, our goal is to equip our students with practical skills and decent knowledge in food science and food inspection administration, so that they will be able to contribute to Taiwan's food factory, pharmaceutical factory



Inspection cooperation. Our student can engage in the job fields-research and development, production, quality control and marketing –relative to food , pharmaceutical factory and biotechnology companies.

## Degrees Offered

■ Bachelor ■ Master

# Mission & Objectives

## Educational Objectives

Program	Objectives
<b>Undergraduate</b>	<ol style="list-style-type: none"> <li>1. Cultivating professionals of food science and food inspection that equally emphasize theories and practice.</li> <li>2. Cultivating the global view and to understand the difference of multi-cultures.</li> <li>3. Cultivating information technology, communication, and teamwork abilities.</li> </ol>
<b>Graduate</b>	<ol style="list-style-type: none"> <li>1. Ability to cultivate innovation, thinks independently, and solves problems.</li> <li>2. Ability to cultivate communication and expansion of international view.</li> <li>3. Handling the modern professional knowledge and ability of functional food development and evaluation..</li> </ol>

## Core Competences

Program	Competences
<b>Undergraduate</b>	<ol style="list-style-type: none"> <li>1. Possess the theoretical foundation of professional management.</li> <li>2. Possess the ability of teamwork, analysis, and solving problems.</li> <li>3. Possess the global awareness of multi-cultures.</li> <li>4. Possess the ability to think independently.</li> <li>5. Grasp the latest development trend of relevant issues of food science and food inspection.</li> </ol>
<b>Graduate</b>	<ol style="list-style-type: none"> <li>1. Possess knowledge and ability of functional food development and evaluation.</li> <li>2. Possess ability to analyze and solve problems.</li> <li>3. Possess international view of food science.</li> <li>4. Possess innovating application ability of food inspection profession.</li> <li>5. Possess research ability of food science new knowledge.</li> </ol>

# Curriculum

## Undergraduate Program of Department of Food Science, Yuanpei University(Academic Year 2014)

Year 1			
Required	Credits	Elective	Credits
Practical English(I)*	2	Chinese style wheat	3
Introduction of computer science	2	flour processing	
Chemistry	3	Beverage Modulation	2
Chemistry experiment	3	Food Logistics	2
Introduction to Food Science	2	Management	
Mathematics	3		
Biology	3		
Food principles	2		
Food principles experiment	1		
Cooperation management	2		
Chinese cuisine cooking and practice	3		
Food Analytical	3		
Food Analytical experiment	1		
Food Processing (1)	2		
Food Processing experiment (1)	1		
Nutrition	3		
Year 2			
Required	Credits	Elective	Credits
Organic Chemistry	3	Quantity food preparation	3
Physiology	2	and management practice	
Food Analytical and inspection (1)	2		
Food Analytical and inspection experiment (1)	1		
	2		
Food Processing (2)	1		
Food Processing experiment (2)	2		
Microbiology (1)	1		
Microbiology experiment (1)	2		
Public Health	3		
Dietary plan and practice	3		
Biochemistry (1)	1		

Biochemistry experiment (1)	2		
Food Analytical and inspection (2)			
Food Analytical and inspection experiment (2)	1		
Microbiology (2)	2		
Microbiology experiment (2)	3		
Year 3			
Required	Credits	Elective	Credits
Directed Individual Study I	2	Research (1)	0
Biostatistics and Software	2	The Experiments of Food	1
Food Microbiology	2	Additives Analysis and	
English for Specific Purpose	3	Examination	
Biochemistry II		Nutritional Assessment	1
Cereal/Legume Processing With Laboratory	3	With Laboratory	
Food Microbiology Laboratory	1	Nitration Throughout The	1
Sanitation Management and Design of Restaurant and Food Processing Plant	3	Life Cycle Biochemistry	
	2	Laboratory II	
Food Engineering I	3	Food Logistics and	3
Food Chemistry	2	Management	
Animal and Dairy Processing	2	Sensory Evaluation of Food	3
Computer Application in Food Technology	2		
Innovation Food Development	2		
Innovation and Development of Food Product	2		
Food Hygiene and Safety	2		
Instrumental Analysis in Food	2		
Year 4			
Required	Credits	Elective	Credits
Food Biotechnology	2	Hygiene Inspection and	2
Biotechnology	2	Management	
Biotechnology Laboratory	2	Food Company Operation	2
Seminar I	3	and Management	

Seminar II	3	Enzymologist	2
Food Engineering II	3	Enzymologist Laboratory	1
Regulation Covering Food Safety and Sanitation	1	Functional Foods	2
		Food Packaging	2
Food Law	1	Food Factory Management	2
		Toxicology	
		Food Processing Technology	2
		Fermentation Technology	3
		with Laboratory	1
		Applied Microbiology	1
		Microbiological	1
		examination Technique of	
		Food	1
		Thesis Writing	1
		Nutrition Biochemistry	3
		Marine Food Processing	2

Graduate Program of Department of Food Science, Yuanpei University  
(Academic Year 2014)

Year 1

Required	Credits	Elective	Credits
Technical English Writing	2	Special topics in health foods	2
Methodology and experiment for Food Research	3	Special topics in biochemistry	2
Seminar	2	Special topics in applied microbiology and	2
Technical English writing (2)	2	fermentation	2
Seminar (2)	2	Special topics in Food safety and contaminants	2
		Development of functional food materials	2
		Special topics in natural product chemistry	2
		Advanced nutrition	2
		Special topics in food and bioindustry technology	2
		Special topics in immunology	2
		Independent study	2
		Special topics and experiments in zymology	2
		Applied bioresource for livestock and aquatic organism	2
		Marketing and management of functional foods	2
		Technical Japanese in food science	2
		Special topics in molecular biochemistry	2
		Special topics in food engineering	2



Year 2			
Required	Credits	Elective	Credits
Seminar (3)	2	Patent and certification of	3
Technical English writing	2	food biotech products	
Master thesis	6	Development and application	2
Seminar (4)	2	of biosensors	
Technical English writing (4)	2	Independent Studies (2)	1

## Faculty and Staff

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## Research

The specialties of the research is divided into five areas: Biosensor ( e.g. Amperometric determination of hydrogen peroxide residue), Functional food developing and evaluation (e.g. Comparison of Peroxynitrite-Scavenging Capacities of Several Citrus Fruit Peels bacteria), Food inspection (e.g. Histamine contents of salted seafood products in Taiwan and isolation of halo tolerant histamine-forming bacteria), nana biotechnology ( e.g. Iron oxide nanoparticles suppress the production of IL-1beta via the secretory liposomal pathway in marine microglia cells) and biotechnology (e.g. A comparative study on batch and fed-batch cultures of oleaginous yeast *Cryptococcus* sp. in glucose-based media and corncob hydrolysis for microbial oil production). Our faculty will actively solicit and apply for funding from Food science and biotechnology relative institutes, such as Ministry of Science and Technology (MOST), Council of Agriculture, Ministry of Health and Welfare (MOHW).

