

## **Master's Degree Program in Food Science**

### **1. Introduction to Major**

Food science focus on the physical, chemical and biological characteristics in different stages of the food production, processing, storage and distribution, as well as the theoretical and technical problems on food nutrition, detection, and security.

The following is the main research directions.

( 1 ) Food chemical engineering: The research fields include the isolation and extraction of food natural active ingredients, the chemical and biological synthesis of food additive. The present research is focused mainly on the separation of proteins and peptides of plant and microbial origin, and their structure-function relationship.

( 2 ) Food preservation and processing engineering: Food preservation and processing engineering are an important part of the food production chain. The main research direction is the fresh-keeping mechanism of fruit and vegetable, the development of new food preservative, and the application of emerging food processing technology.

( 3 ) Food biological engineering: The main research direction is genetic engineering and fermentation engineering. By using genetic engineering, we try to improve food nutrition and its safety, and to research on the theoretical and technical problems in the process of fermented food production.

### **2. Objectives**

Students will master basic theory and professional knowledge food science, and modern experiment skills. The course will render students understanding the development situations and trends of modern food science theory and technology. Students will obtain the ability to work on professional scientific research, teaching, management, or other professional tasks. Students are trained with the rigorous scientific style and the good cooperation spirit, and the capability of international academic exchange. Certain academic achievements in study of food science should be achieved. The final purpose is the training of technology talents who will lead the development of food science and engineering in the future.

### **3. Duration**

Tutor shall assume overall responsibility for the education of his/her graduate student. The courses learning combination with scientific research is our cultivation way. Through the course, students will grasp the discipline theory knowledge systematically. Through scientific research, they will ability to engage independently in academic research. Period of schooling is 3 years.

### **4. Courses and Credits**

Student must complete a total of no less than 27 credit points, in which at least 14 cpts are core courses, at least 3 cpts compulsory courses, and at least 10 cpts elcetives.

Course Type	Course code	Course Name	Hours	Points	Note
Core Courses	S131G002	Theory and Practice of Socialism with Chinese Characteristics	36	2	
		First Foreign Language	32	2	
	S131GA06	Applied Statistics	32	2	
	S131GA07	Optimization Methods	32	2	
	S220G010	Modern Food Chemistry	32	2	
	S220G012	Modern Food Microbiology	32	2	
	S207EP01	Thesis Selecting and Writing	16	1	
		English Writing of Scientific and Technical Papers	16	1	

Compulsory Courses		Academic Foreland in Food Science and Academic Ethics	16	1	
		Academic Exchange		1	
	S220R004	New Experimental Techniques of Modern Food Science	16	1	
Optional Courses	S131G003	Introduction to Dialectics of nature	18	1	Required courses, choosing one.
		Marxism and Social Science Methodology	18	1	
	S220E017	Postharvest Biology of Fruits and Vegetable	32	2	≥4 points, choosing two.
	S220E019	Advance on Fruit and Vegetables Processing	32	2	
	S220E020	Food Enzymology	32	2	
	S220E021	Advances in Functional Food	32	2	
	S220E022	Biochemical Separation Engineering	32	2	
		Transdisciplinary Studies			≥5 points.
		English			

## **5. Dissertation**

### **(1) Thesis proposal**

It should be completed early in the third semester under the guidance of tutor.

### **(2) The mid-term examination**

It proceed at the end of the third semester, examining the graduate student's comprehensive ability, paper work, working attitude, and the effort level. One who go through the mid-term examination is permitted to continue their paper work.

### **(3) Thesis writing and defense requirement**

It should abide by Tianjin University master, doctor's degree work detailed rules for the implementation, and paper publications should match the required standard formulated by School of Chemical of Engineering and Technology