Southwest University
Graduate Course Syllabus

Course Unit: School of Food Science

Course No.	1108320024		Course	Food Optimization Experiment Design					
Course category (√)	Compulsory courses (√) Elective courses ()	Credit hour	2	Total class hours	50	Lecture hours	47	Discussion Hours	3	Experiment hours
Lecturer	Yang Jian Tong Huarong	Job title Degree	Professor Professor		Specialties		Food test statistics Food test statistics		

Range of application by majors: College of Food Science, College of Horticulture, College of Life Sciences.	
Prerequisite courses:	

Teaching objectives and requirements:

   The graduate students should grasp the basic methods of data processing through this course, and focus on the multivariate analysis of data and the experimental design and data analysis of biological food test, especially the design methods of regression orthogonal, quadratic regression orthogonal and rotational combination design, as well as the usage conditions and data analysis methods.

Students are required to understand and master the concepts and regression methods of linear regression in the process of learning, and grasp the hypothesis test methods of the results and equations. For multivariate regression, stepwise regression, path analysis, multivariate correlation and partial correlation, we should also understand the method of data analysis and master the meaning of data results. Another focus is on the principle and data calculation method of quadratic regression orthogonal and rotary combination design, and apply the analytical method to the basic scientific research of food and biology.

Teaching methods and test methods (it should be conducive to cultivate graduates' innovative thinking and innovation ability):

The class teaching and demonstration will be the main way, explain the basic methods and principles of food optimization test design systematically through classroom teaching. And then achieve the purpose of teaching.

   In the course of teaching, the appropriate homework and curriculum design will make students achieve the effect of learning.

Course content and course hours allocation

Chapter 1: Analysis of Variance Analysis (3 hours)

Chapter 2: Introduction to Linear Regression and Correlation Analysis (4 hours)

1. linear regression equation

2. the hypothesis test of the linear regression equation

3. linear correlation

Chapter 3: Multiple Regression and Relevance (18 hours)

1. multiple regression (4 hours)

2. stepwise regression (8 hours)

3. through the analysis (3 hours)

4. partial correlation and multiple correlation (3 hours)

Chapter 4: Orthogonal Design (4 hours)

Chapter 5: Orthogonal Design for Regression (18 hours)
1. one-time regression orthogonal design (5 hours)
2. quadratic regression orthogonal design (5 hours)
3. the rotation design of regression (6 hours)

Course design (3 hours)

Course Test (3 hours)

(Please add more pages if this page is insufficient)

The Catalog for main reference book (periodicals):

S.N.	Author	Books and Periodicals' name	Press
1	Wang Qinde, Yang jian	*Food Test Design and Statistical Analysis*	China Agricultural University Press, 2002
2	Ge Junyi	*Test statistical method*	China Agricultural University Press, 2000
3	Dong Shifu	*Biostatistics*	Science Press, 2002

Review Comments of School (Institute, Center):   Signature   (Date)
Review Comments of Student Committee: Signature   (Date)
Review Comments of Graduate School   Signature   (Date)