

# 101-2 Preliminary Syllabus, Da-Yeh Univ

Information			
Title	食品分析	Serial No. / ID	0448 / BTI2045
Dept.	生物產業科技學系	School System / Class	大學日間部2年1班
Lecturer	許文光	Full or Part-time	兼任
Required / Credit	Optinal / 3	Graduate Class	No
Time / Place	(五)567 / H607	Language	Chinese

Introduction
This course aims to familiarize students with the principles of food inspection and analysis and theoretical basis, and food testing analysis of various knowledge, to foster research and development of food quality control laboratory and the personnel.

Outline
<p>First, the analysis of samples</p> <ol style="list-style-type: none"> <li>1. sampling and experimental error               <ol style="list-style-type: none"> <li>(1) the importance of sampling and how sampling</li> <li>(2) recognition errors and to avoid errors arising</li> </ol> </li> <li>2. Sample Preparation and Storage</li> </ol> <p>Second, the analysis methods and results of determination</p> <ol style="list-style-type: none"> <li>1. Analysis of the sensitivity</li> <li>2. Analysis of the accuracy of the results</li> <li>3. Analysis of the reproducibility of results and statistical analysis</li> </ol> <p>Third, the basis of principles of food ingredients</p> <ol style="list-style-type: none"> <li>1. food composition of extraction, separation, purification, concentration and identification of individual components               <ol style="list-style-type: none"> <li>(1) extraction, separation and purification of the principle</li> <li>(2) evaporation and volatile principle (pressure drying, vacuum drying, freeze drying and vacuum distillation)</li> <li>(3) enrichment enrichment principle and the conditions of food ingredients: distilled, inflatable, vacuum concentration</li> <li>(4) centrifugal principle</li> <li>(5) the characteristics and selection of solvents</li> </ol> </li> <li>2. Food Principle component analysis               <ol style="list-style-type: none"> <li>(1) Water Analysis: pressure method, decompression, infrared, distillation, Karl Fischer potential difference Titration, NMR, microwave heating, desiccant type</li> <li>(2) Water activity determination:                   <ol style="list-style-type: none"> <li>a. the definition of water activity</li> <li>b. water activity on the importance of food hygiene and safety</li> <li>c. Determination of water activity</li> </ol> </li> <li>(3) Quantitative ash</li> </ol> </li> </ol>

- a. the definition of ash
- b. The testing ash application in food analysis
- c. ash of the quantitative method
- (4) The quality control program and the determination of lipid
  - A. Quantitative analysis of crude fat
    - a. Soxhlet ether extraction method
    - b. Folch dichloromethane / methanol liquid-liquid separation
  - B. Physical Chemistry test: melting point, refractive index, curing point, viscosity, expansion Rate, and the color of smoke point
  - C. oil quality control program
    - a. price or the percentage of free fatty acid (AV or% FFA)
    - b. iodine value (IV)
    - c. saponification value (SV)
    - d. Color (R.Y value)
    - e. peroxide value (POV)
    - f. TBA value
- (5) Carbohydrate
  - A. The stability and response to sugar
  - B. Determination of total sugar
  - C. The quantitative method of reducing sugar
  - D. The quantitative method of non-reducing sugar
  - F. starch gelatinization and Quantitative
  - G. Quantitative pectin
  - H. chromatography of carbohydrates
- (6) photoelectric colorimetry
  1. protein standard calibration curve produced
  2.  $\text{KMnO}_4$  standard calibration curve produced

Prerequisite

Food chemistry