

FOOD 527G (3 credits) HACCP Food Safety Management System

Target Audience

The course is designed primarily for the MFS (Master of Food Science) students. However, this course would also be beneficial for other Food Science graduate students (M.Sc. and Ph.D.).

Course Description

The HACCP (Hazard Analysis and Critical control Point) focuses on the application of the scientific principles of hazard analysis for food safety programs.

Students entering this course must have a background in microbiology, food plant hygiene, and HACCP principles. These concepts will be reviewed in the first 8 hours of class by developing a HACCP plan for a food product using the Canadian FSEP procedure as a guideline. Good Manufacturing Practices as a means to control food safety hazards will be reviewed in this exercise. Students will prepare Standard Operating Procedures for the control of hazards.

Students must also have sufficient background in statistical methods. The pre-requisite of AG 352 or similar is required. The 7 Quality Tools will be reviewed by on-line assignment.

Students will apply Statistical Process Control (SPC) techniques to a typical HACCP implementation situation. A case study format will encourage the students to function as a HACCP team. In the case study students will prepare a quantitative hazard analysis and determine the CCP and establish the critical limits. Previous use of excel in preparation of control charts is an asset although not necessary. A supplemental tutorial will be available for required excel applications.

Students will study current examples of major food-borne disease outbreaks. HACCP as an international tool for food safety will be analyzed. Other internationally accepted Quality Management programs will be reviewed (ISO 22000:2005, Food safety management systems).

Verification of HACCP plans will be learned using a case study that also reviews and applies statistical sampling techniques. This exercise will involve a discussion of emerging food safety issues with Listeriosis as the case study. The role of environmental sampling procedures as an alternative to finished product sampling will be evaluated.

A final module of the course will discuss validation of HACCP programs. Regulatory audits and 3rd party audits will be compared. The role of member organizations such as the American Society for Quality and its programs such as the ASQ Certified HACCP Auditor will be assessed.

Course Objectives and Learning Outcomes

At the end of this course students will be able to:

- Explain the Principles of HACCP and demonstrate their effectiveness in the prevention of food safety hazards.
- Prepare a HACCP plan for a simple food process
- Conduct a quantitative hazard analysis for the determination of a Critical Control Point.
- Apply statistical process control (SPC) techniques for process improvement.
- Analyze data in a food processing plant and construct sampling plans suitable for use in a HACCP plan.
- Outline the process for validation of a HACCP program.

Enhance decision-making skills and develop an ability to apply analytical tools in true-to-life situations through preparing solutions to different case studies.

Structure/Format

This course will be offered in term 2 (winter session). The course will comprise of lectures and hands-on exercises. Lecture materials will be posted on WebCT VISTA. Also all communication and discussion between students and instructor would be conducted using WebCT.

Teaching Materials

Each student will be charged \$20 for a copy of the Memory Jogger II. A personal copy of this item is mandatory. Other course materials are available in PDF format on WEB CT or provided by instructor in class.

References

Hazard Analysis and Critical Control Point/Food Safety Enhancement Program. Canadian Food Inspection Agency. <http://www.inspection.gc.ca/english/fssa/polstrat/haccp/haccpe.shtml>

IFT Expert Report on Emerging Microbiological Food Safety Issues. Implications for the 21st century. IFT Report, February 2002. http://members.ift.org/IFT/Research/IFTExpertReports/microsfs_report.htm

Suggested References:

Besterfield, D.H. (2004) Quality Control 7th Edition. Pearson Prentice Hall, Columbus, Ohio.

Mortimore, S and Wallace, C. (1998) HACCP A Practical Approach. 2nd Edition Aspen Publishers, Gaithersburg, Maryland

Surak, John. (2007) The Certified HACCP Auditor Handbook ASQ Quality Press

Evaluation of Learning/ Course Grading

There will be a review quiz on HACCP principles and Quality Tools in week 3 and a final exam.

Review Quiz	15%
Final Exam	30%
Group Projects/Case Studies	55%
Total	100%