Food Science

April 2020

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Basics of Food Science

• Research specific food science positions, including specific companies, job titles, salary, roles and responsibilities, and prerequisites.
• Interview a food science professional or perform a job shadow in the food science field.
• Distinguish between specialized food scientist careers and evaluate the differences.
• Complete an in-person tour of either a food science company or a food science (FDSC) or food science and technology (FDST) program at a local college or university.

Food Microbiology

• Research specific food microbiology positions, including specific companies, job titles, salary, roles and responsibilities, and prerequisites.
• Perform a job shadow in the food microbiology field.
• Prepare a food product fermented with beneficial microorganisms.
• Explain how the FDA, USDA and CDC trace food outbreaks.
• Choose a recent food outbreak to research (cause, impact, etc.).

Food Laws and Regulations

• Research specific food safety and regulatory positions, including specific departments, job titles, salary, roles and responsibilities, and prerequisites.
• Research and define Code of Federal Regulations (CFR).
• Analyze how Hazard Analysis Risk-Based Preventative Controls (HARPC) and Food Laws coincide, using the CFR.
• Explain the weaknesses of early food laws.
• Synthesize a HARPC plan using internet resources.
Food Chemistry

- Research specific food chemistry positions, including specific companies, job titles, salary, roles and responsibilities, and prerequisites.
- Design a food chemistry experiment to study starch gelatinization using online resources.
- Define the various types of emulsions in food.
- Differentiate between and explain the various pigments in food.
- Examine the various methods of denaturing proteins.
- Identify the necessary components and conditions for the Maillard Reaction to occur.

Food Sensory Science

- Explain discrimination or difference sensory analysis.
- Explain descriptive sensory analysis.
- Explain affective, or hedonic sensory testing.
- Research the triangle test, paired-comparison test and duo-trio test.
- Identify the limitations of various testing methods.
- Design your own sensory test.

Food Science, Safety and Sanitation in the Kitchen

- Research various culinary science positions, including specific companies, job titles, salary, roles and responsibilities, and prerequisites.
- Analyze nutrition principles as they apply to culinary science.
- Determine how cooking techniques affect the nutrition of the various food groups.
- Compare various global cuisines and the predominate ingredients in those cuisines.