



HOPE COLLEGE OF BUSINESS SCIENCE  
AND  
TECHNOLOGY



*Welcome to the Department of Food Science  
and Technology at Hope College of Business,  
Science and Technology*

**1. Introduction**

This handbook was developed to help students become oriented to Food Science and Technology at Hope College of **Addis Ababa**. One of the main goals of Hope College of Business, Science and Technology is to “put students first” and in the Department of Food Science and Technology we are committed to make that happen.

## 1.1. What Is Food Science & Technology?

Food Science is the discipline in which biology; chemistry, microbiology, physical sciences, and engineering are used to study the nature of foods, the causes of their deterioration, and the principles underlying food processing. Food Technology is the application of food science to the selection, preservation, processing, packaging, distribution, and use of safe, nutritious, and wholesome food.

Food Science and Technology is a science that focuses on the biological, physical and microbiological aspects of food itself and on the technological (processing) aspects of the transformation of foods into various consumer products. Food scientists study the physical, microbiological, and chemical makeup of food. By applying their findings, they are responsible for developing the safe, quality and nutritious foods for the general public.

The commercial end result of Food Science and Technology is the delivery of acceptable foods to consumers. To produce acceptable food products:

- 1) The demanded of the consumer should be understood through new food product development by performing sensory evaluation techniques. Product development has been a major activity in the food industry for over 40 years, but only gradually has it developed as a strategic business area and also as an advanced technology.
- 2) There should be excellent food safety management system at our food producing industries
- 3) The chemical nature of the food should be well known through Food chemistry
- 4) Disease causing food borne infections and intoxicant should be well studied through Food Microbiology
- 5) Food industry management knowledge and principle should be implemented in our food industries and systems
- 6) Processing technology for all type of foods should be known .

The food you consume on a daily basis is the result of extensive food research, a systematic investigation into a variety of foods' properties and compositions. After the initial stages of research and development comes the mass production of food products using principles of food technology. So generally Food Science and Technology is the key to the conversion of raw agricultural materials into a wide variety of properly processed and preserved foods. It is very vital for the country like Ethiopia who's Economy depends on agriculture.

## 2. Why we need to study Food Science and Technology

### 2.1. To produce quality and safe food products for the consumer

There are several problem related to food. More than 200 diseases are spread through food (WHO,2012). Millions of people fall ill every year and many die as a result of eating unsafe food. Diarrhea diseases alone kill an estimated 1.5 million children annually, and most of these illnesses are attributed to contaminated food or water. Malnutrition (over nutrition and under nutrition) prevalence also advanced in our world from time to time (WHO,2012).

### 2.2. To add value for our food products

Ethiopia is well known in animal and plant source food products but due to lack of Technology, professionals and processing industries, we still sell our food products as a primary producer without

value addition. The number of food processing industries in Ethiopia is now increasing. Hope college will definitely contribute to the needed manpower for these new industries.

### *2.3. To secure food security*

Food security is a major concern in large parts of the developing world. Food production must clearly increase significantly to meet the future demands of an increasing and more affluent world population. Through Food Science and Technology we can preserve our food for a long period of time without spoilage using different Technologies or by innovating Technologies through research. In our world, roughly one-third of food produced for human consumption is lost or wasted globally, which amounts to about 1.3 billion tons per year (FAO,2011). The problem is not uncommon in Ethiopia. As a result food security is not secured in many part of the world.

## *Food Science and Technology Department at of Hope College of Business Science and Technology*

The Department of Food Science and Technology is one of the eight departments of the college. It is unique in that it is dealing with Food Science and Technology which is an untapped but promising area for future development in food production and Technology.

### *Food Science and Technology is interdisciplinary*

It incorporates concepts from many different fields of applied sciences including Biology, Chemistry, physics, microbiology, Health and medicine, nutrition, chemical engineering, manufacturing and biochemistry

### **Graduates of BSc in Food Science and Technology will have knowledge and understanding of:**

- The general characteristics and composition of all food materials
- The microbiology, chemistry, and physical properties of foods
- Nutritional compositions, and values of foods and beverages
- The impacts of food processing, and preservation on the nature and nutritional values of the foods
- Biochemistry of the foods, in relation to human and animal anatomy, and physiology
- Relationships between foods, nutrition, diet, and health
- New food product development, and fortification
- Working areas of Food Industries & nutrition related sectors



*Students are Highly Motivated by the Conducive Atmosphere at the college.*

- Uniquely built library with a lawn on the roof



*The library is well-furnished library and stocked with books and online references.*

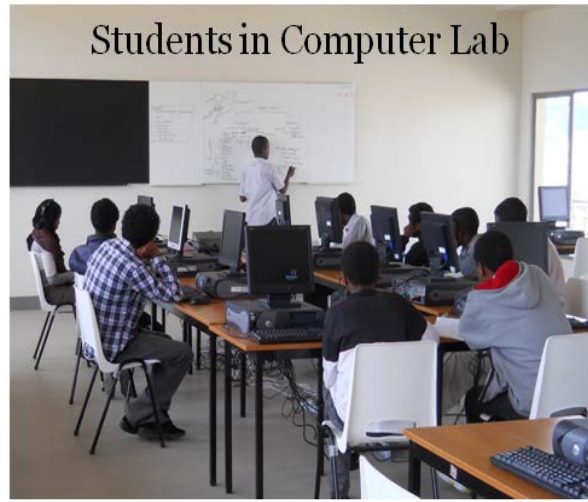


**Students often make presentations in class**

- *Excellent classrooms, lab, computer and internet facilities*



Preparing for the bachelor's thesis using the Food Science Lab



The classroom atmosphere



With exchange students from University in the Netherlands

### *Career Opportunities in Food Science and Technology*

The college had its first graduates at the end of the academic year 2016/2017. It is reported that all 15 of them have secured jobs in different sectors related to the Food Industry. As the country strives to be self-reliant in quality food production, food Science will be a leading area in career opportunities.



*Graduates in Food Science and Technology work as food chemists, food microbiologists, nutrition specialists, food technology and nutrition research experts, product developers, quality control technologists, food industry or quality control managers, process engineers, marketing specialists, teachers/trainers and others.*

### *Potential Employers of Food Science and Technology Graduates*

- All food and beverage industries
- Large scale and small scale Food manufacturers and suppliers
- Hospitals, and organizations focusing on public health nutrition issues
- Food import export related organizations and agencies

- Wine and alcoholic drinks industries
- Teaching and research conducting institutions.
- Research laboratories in Food Science and related areas
- Food based agricultural organizations
- Health agencies
- Quality Control Agencies
- Food Science, Food Technology or Nutrition related NGOs and departments

### *Sample of Courses offered in Food Science and Technol*

- Fundamentals of Nutrition Science
- Organic Chemistry for food science and Technology
- Biochemistry for Food Science and Technology
- Principles of Food Processing
- Human Nutrition and Health
- Food Microbiology
- Food Chemistry
- Food Analysis
- Food Product Development
- Food Packaging
- Computational Methods in food Science and Technology
- World Food Issues
- Food Safety and Sanitation
- Food Legislations
- Principles of Food Engineering
- Sensory Evaluation
- Food Chain Management
- Fermentation Technology
- Cereals and Legumes Technology
- Fruits and Vegetable Technology
- Technology of Meat, Fish and Poultry Products
- Food Industry Management
- Technology of Oil Seeds
- Food Biotechnology
- Technology of Dairy Products
- Food Toxicology
- Quality Control in Food Systems
- Research Methods in Food Science and technology
- Senior Project
- Internship, practical acquaintance with the real work environment in organizations engaged in food processing, preservation, quality and safety controlling, nutrition, dietetics, food based agricultural, and agro-processing, and food security issues.
- Fundamentals of Food Science
- Fundamentals of Nutrition Science
- Organic Chemistry for food science and Technology
- Biochemistry for Food Science and Technology
- Principles of Food Processing
- Human Nutrition and Health
- Food Microbiology
- Food Chemistry
- Food Analysis
- Food Product Development
- Food Packaging
- Computational Methods in food Science and Technology

- World Food Issues
- Food Safety and Sanitation
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- Principles of Food Engineering
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- Fermentation Technology
- Cereals and Legumes Technology
- Fruits and Vegetable Technology
- Technology of Meat, Fish and Poultry Products
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### **Admission Requirements:**

The department of food science and technology is open to both Ethiopian candidates and international students. Ethiopian students wishing to join the department of food science and technology require the following admission requirements:

- Complete the precollege level education and fulfill the minimum college admission standard set forth by the ministry of Education.
- Have Interest in food science and technology
- Shows passion for learning and determination to take advantage of the academic opportunities at Hope College of business, science, and technology as stipulated in the charter.
- International students can also apply for the program, and admission to the program shall be in effect following a prior agreement with the college. Fully furnished and equipped dormitory available for international students for rent in the college compound.
- Application forms can be either downloaded from the college's website or picked up from either main campus registrar office in Lebu area or from its downtown office on churchill road. Completed application can be returned in person or mailed or emailed with two passport size photos, copies of last school's or college's transcript and certificates to the office of the Registrar.

- **Duration of the study:**

The program requires four years (8 semesters) academic study. The total credit hours covered is 144.

- **The degree Nomenclature:**

Bachelor of Science degree in food science and technology (Translated into Amharic as “በፍጥረት ምግብ ምርት ቴክኖሎጂ ላይ ባለፈው ስነ-ምግባር”) )

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