FST 1102 INTRODUCTION TO FOOD SCIENCE AND TECHNOLOGY

1. *COURSE INSTRUCTOR (S)*
* *Associate Prof. Archileo N. Kaaya*
* *Mr. Alex Bambona*
1. *COURSE TYPE:*

*Core course for Year 1 BSc. Food Science & Technology and B. of Agribusiness Management*

1. *COURSE STRUCTURE*

*Course is 3 credit units (3 CU): 2 lecture hours and 2 tutorial hours per week for 15 study weeks; [i.e. 30 lecture hours & 30 tutorial hours equivalent to 45 contact hours].*

1. *COURSE DESCRIPTION*

An introduction to Food Science and Food Technology, its scope and importance. Principles and technological basis. Importance of Food science and technology. Characteristics of food industries. Unit operations of the food industry. Relationship between agriculture, food and nutrition of the food industry. Concept of the leaky food pipeline. Food components. Introduction to methods of food processing and preservation. Elements of food acceptance and quality control.

1. *COURSE OBJECTIVES*

*By the end of the course, students should be able to:*

1. *Describe the scope and importance of food science and technology*
2. *Explain the characteristics of food industries and the need for allied industries.*
3. *Outline the components of food and their uses*
4. *Discuss unit operations of the food industry including quality control measures*
5. *RECOMMENDED REFERENCES*
6. *Potter, N.N, Hotchkiss, J.H 1998. Food Science. 5th Edition. Aspen Publishers, Inc. Maryland USA.*
7. *Ronsivalli, L.J and Vieira, E.R. 1992. Elementary Food Science. 3rd Edition. Van Nostrand Reinhold, New York.*
8. *Jay, J. M.Modern Food Microbiology 6th Edition. An ASPEN Publication, Gaithrsburg, Maryland, USA*
9. *COURSE CONTENT, METHODS OF INSTRUCTION, TOOLS AND*

*EQUIPMENT*

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| ***TOPIC*** | ***CONTENT*** | ***METHOD OF INSTRUCTION/ Time allocation******(i.e. contact hours)*** | ***TOOLS/ Equipment needed*** |
| *1. INTRODUCTION* | * *What is FS & FT?,*
* *Scope of FST*

*Roles/Activities of Food Technologists / Scientists* | *-Interactive lectures* *(3 hrs)*  | *LCD projector/ BB/ White boards / markers/chalk* |
| 2. THE FOOD INDUSTRY | * *Industry vs factory*
* *what constitutes the food industry*
* *characteristics of the food industry*
* *Allied industries*
 | *-Interactive lectures* *(3 hrs)*  | *LCD projector/ BB/ White boards / markers/chalk* |
| 3.COMPONENTS OF FOOD  | * *Carbohydrates*
* *Proteins*
* *fats, vitamins*
* *minerals*
* *toxicants*
* *enzymes, etc.*
* *Their properties and importances*
 | *-Interactive lectures* *(4 hrs)*  | *LCD projector/ BB/ White boards / markers/chalk* |
| 4. THE RELATIONSHIP BETWEEN AGRICULTURE, FOOD AND NUTRITION | * *Contribution of agriculture to economy*
* *Nutritional status and health*
* *The conceptual framework*
* *Gender in food and nutrition aspects*
 | *- Interactive lecture* *(3 hrs)* | *LCD projector/ BB/ White boards / Flip charts* |
| 5. THE LEAKY FOOD PIPELINE | * *Food loss/spoilage*
* *Causes of food loss and their characteristics*
 | *-Interactive lectures* *(3 hrs)*  | *LCD projector/ BB/ White boards / Flip charts* |
| 6. METHODS OF FOOD PROCESSING & PRESERVATION | * *What is food processing & preservation?*
* *Why process & preserve food?*
* *The Physical, chemical & biological methods of processing & preservation*
 | *-Interactive lectures including guest speakers**(5 hrs)* | *LCD projector/ BB/ White boards / markers/chalk* |
| 7. UNIT OPERATIONS IN THE FOOD INDUSTRY | * *What are unit operations?*
* *The common unit operations*
* *Process operations*
 | *- Interactive lectures (4 hrs)* | *LCD projector/ BB/ White boards / markers/chalk* |
| 8. PRODUCT QUALITY | * *What is quality?*
* *Factors that determine quality.*
* *Quality control and assurance activities.*
* *Food safety, risks and hazards.*
 | *- Interactive lectures including guest speakers (4 hrs)* | *LCD projector/ BB/ White boards / markers/chalk* |

1. *SUMMARY OF T IME (as contact hours) NEEDED*
* *Lecture hours 30 hrs*
1. *OVERALL COURSE EVALUATION*
* *Individual & group assignments and tests 40%*
* *Final exam 60%*