## **Project 1.1: Knowledge Map Template of “Food Science”**

**1. KM Name:** Food Science

**2. KM Nickname:** None

**3. KM Domain/Subject/Topic Description:** Food science is the [applied science](https://en.wikipedia.org/wiki/Applied_science) devoted to the study of [food](https://en.wikipedia.org/wiki/Food). It is the discipline in which the engineering, biological, and physical sciences are used to study the nature of foods, the causes of deterioration, the principles underlying [food processing](https://en.wikipedia.org/wiki/Food_processing), and the improvement of foods for the consuming public". [1]

**Please check**

[Food science - cloudfront.net](https://d2ct263enury6r.cloudfront.net/Sar23kaypK1COnkjSm0g5lzTDYl7oUw5hIEuC7YAGNJNoB7w.ppt)

**Q = Quality Factors**

**EBT**

**BO**

**IO**

**4. EBTs/Goals:** Name the EBTs of the “Food Science” and provide a short description of each EBT and organize your answer in table 1.1.1:

**Table 1.1.1:** EBTs of “Food Science” [2] [3] [4] [5]

|  |  |
| --- | --- |
| **EBTs/Goals** | **Description** |
| Food Science | The application of basic sciences and engineering to study the physical, chemical, and biochemical nature of foods and the principles of food processing. |
| Processing | Food processing is the treatment of food substances by changing their properties to preserve it, improve its quality or make it functionally more useful. |
| Packaging | Food packaging is [packaging](https://en.wikipedia.org/wiki/Packaging) of food to preserve food after it has been processed and contain it through distribution. Its main objective is to provide physical and barrier protection for food |
| Quality Assurance | Quality assurance is any systematic process of checking to see whether the food is meeting specified requirements about its quality. |
| Preservation | Food preservation is to prevent the growth of [bacteria](https://en.wikipedia.org/wiki/Bacterium), [fungi](https://en.wikipedia.org/wiki/Fungus) (such as [yeasts](https://en.wikipedia.org/wiki/Yeast)), or other [micro-organisms](https://en.wikipedia.org/wiki/Microorganism) (although some methods work by introducing benign [bacteria](https://en.wikipedia.org/wiki/Bacteria) or fungi to the food), as well as slowing the [oxidation](https://en.wikipedia.org/wiki/Redox) of [fats](https://en.wikipedia.org/wiki/Fat) that cause [rancidity](https://en.wikipedia.org/wiki/Rancidification). Food preservation may also include processes that inhibit visual deterioration, such as the [enzymatic browning](https://en.wikipedia.org/wiki/Enzymatic_browning) reaction in apples after they are cut during food preparation. |

**Other EBTs**

**Applicability**

**Engineering**

**Education**

**Analysis**

**Agriculture**

**Genomics**

**Microbiology**

**Nutrition**

**5. BOs/Properties:** Name the BOs of the “Food Science” and provide a short description of each BO and organize your answer in table 1.1.2:

**Table 1.1.2:** BO’s of “Food Science” [2] [3] [4] [5]

|  |  |
| --- | --- |
| **BOs/Capabilities** | **Description** |
| Preservatives | Products used for preservation of food items. |
| Government Regulations | Set of rules and regulations by the government regarding the quality of food items. |
| Safety Measures | Precautionary measures that need to be taken in order to meet the government standards for quality of food. |
| Actor | An object or entity that has an identifiable name, and performs a role. |
| Packing Materials | Different materials used in food packaging like cardboard boxes. |
| Processor tools | Tools used in food processing. |
| Nutritional Values | Nutritional value of the food contents like fats, carbohydrates, proteins, vitamins et cetera. |
| Ingredients | Various ingredients used in making food items. |

**6. Knowledge Map (Core Knowledge):** Map each EBT to its BOs of the “Food Science” and organize your answer in table 1.1.3:

**Table 1.1.3:** Knowledge Map of “Food Science” [2] [3] [4] [5]

|  |  |
| --- | --- |
| **EBTs** | **BOs** |
| Food Science | Ingredients, preservatives, nutritional values, processor tools, packaging materials, government regulations, actor, safety measures |
| Processing | Ingredients, actor, processor tools |
| Packaging | Actor,packaging materials, preservatives,safety measures, ingredients |
| Quality Analysis | Actor, government regulations, safety measures, nutritional values |
| Preservation | Actor, ingredients, preservatives |

**Quality Factors:**

Freshness

Hygienic

Informative

Effective

Impressive

**References:**

[1] https://en.wikipedia.org/wiki/Food\_science

[2]<http://www.ift.org/knowledge-center/learn-about-food-science/food-facts/about-fs-and-t.aspx>

[3] <http://searchsoftwarequality.techtarget.com/definition/quality-assurance>

[4]N. Potter, Food science, 1st ed. [Place of publication not identified]: Springer, 2013.

[5] https://en.wikipedia.org/wiki/Food\_preservation