**Course Delivery Plan**

**Department of Nutrition and Food Engineering**

**Semester**: Spring 2022

**Course Code: NFE 415 Credit Hours: 3**

**Course Title: Food Storage Engineering**

**Course Rationale:** Skill development of infrastructural design knowledge for food plant instillation in respect to Quality Assurance.

**Objective of the course:**

Student will earn knowledge on storage ventilation, temperature control, product arrangement, procurement schedule, LIPO –FIFO Methods, delivery and distribution, product chart, Indent issue, Quality pass system, Material specification reservation and record documentation as per FSMS, BSTI.

**Learning outcome:**

* Able to earn knowledge in storage management system, thermal activity for proper preservation in the store.
* Able to learn Proper ventilation into the store room for temperature adjustment in respect to product shelf life
* Product load and heat load calculation, Adjustment of heat passing zone
* Able to understand the modern tools for food extraction, dehydration and preservation

**Theory Session Plan (In order of Conduction in the class):**

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| --- | --- | --- |
| **Week No** | **Topics** | **Assessments****(ASSN/CT/Mid/Final)** |
| WK 1 | 1. Introduction to storage
 | None |
| WK 2 | 1. Storage structure (Traditional & Modern)
 | None |
| WK 3 | 1. Food spoilage
 | Quiz 1 |
| WK 4 | 1. Design and consideration for food aid storage
 | None |
| WK 5 | 1. Air property
 | None |
| WK 6 | 1. Modified atmosphere storage
2. Controlled Atmosphere storage System
 | Quiz 2 |
| **WK 7** | **Midterm Exam****Syllabus: 1-7** | **Midterm Exam** |
| WK 8 | 1. Handling and storage of food aid commodities
 | None |
| WK 9 | 1. Inspection and sampling
 | None |
| WK 10 | 1. Testing of sample for fitness
 | Quiz 3 |
| WK 11 | 1. Insect pests of food storage
 | None |
| WK 12 | 1. Pest management
 | Quiz 4 |
| WK 13 | 1. Design of a Cold Storage
 | None |
| WK 14 | **14. Review class (If needed)** | None |
| **WK 15** | **----- Final Exam Week ------*****Lecture: 07-14 (Final Exam)*** | **Final Exam** |

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| **Text Books:**1. Engineering properties of foods, Author(s): Rao. M. A; Rizvi. S. H.; Datta, A K,Correspondence address: Cornell Univ. Geneva, NY. USA, Publisher
2. Extrusion cooking technology and application, Robin Guy" Culinary and hospitability industry publications services.
3. Engineering and food for 21 stCensory . Jorge Welti-Chanes, Gustavo Vand Barbosa Canovas, Culinary and hospitability industry publications services.
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**Evaluation Strategy:**

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| --- | --- |
| **Evaluation Items** | **Marks** |
| Class Participation/ attendance | 7% |
| Quizzes (3) | 15% |
| Assignment | 5% |
| Presentation | 8% |
| Mid-Term | 25% |
| Final | 40% |
| **Total** | **100%** |

**Grading Policy:**

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| --- | --- | --- |
| Letter grades will be awarded as per the rules of DIU as follows: Numerical Grade | Letter Grade | Grade Point |
| 80% and above  | A+ | (A Plus) | 4.0 |
| 75% to less than 80%  | A | (A regular) | 3.75 |
| 70% to less than 75%  | A- | (A minus) | 3.5 |
| 65% to less than 70%  | B+ | (B Plus) | 3.25 |
| 60% to less than 65%  | B | (B regular) | 3.0 |
| 55% to less than 60%  | B- | (B minus) | 2.75 |
| 50% to less than 55%  | C+ | (C Plus) | 2.5 |
| 45% to less than 50%  | C | (C regular) | 2.25 |
| 40% to less than 45%  | D | (D regular) | 2.0 |
| Less than 40%  | F | (F Fail) | 0.0 |

**Course Teacher:**

**Tajnuba Sharmin**

Lecturer

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