**Conditioning and storage of plant products
*(Year IV, Semester VII)***

**Number of ECTS credits: 4**

**Course Status:**Domain Discipline (Mandatory)

**Course Code: A.EMIAIA.D.401**

**Course coordinator:**Associate Professor Dr. Ioan PUIU

**Course objectives (lectures and practical works)**

During the lectures, the aim is for students to acquire knowledge regarding the reception, conditioning, preservation methods, and storage of agricultural plant products. Additionally, students will gain an understanding of product monitoring during storage and the calculation of losses incurred during conditioning and storage.

In the practical sessions, students will focus on acquiring knowledge about the morphological, anatomical, and biochemical characteristics of agricultural products that influence their storage; quality control of products; and the determination of losses during the conditioning and storage of agricultural plant products.

|  |
| --- |
| **Course (Chapters/subchapters)** |
| Cap.1. Introduction: Scope of study, importance of processing and storing agricultural products, connection with other disciplines. |
| Cap.2. Physical, physiological, biochemical, and quality-related properties influencing processing, preservation, and storage of seed. |
| Cap.3. Storage conditions. Storage constructions and spaces: classification, description, preparation, and maintenance. |
| Cap.4. Equipment for handling, cleaning, sorting, drying, aeration; dust collection systems; measurement systems for storage conditions; centralized control and communication installations. |
| Cap.5. Reception and weighing of agricultural products (drafting a reception plan, organizing reception processes, classification, and description of weighing devices.). |
| Cap.6. Product compartmentalization and storage. Importance, principles, screening, aspiration; cleaning and sorting of seeds by various properties; technological flow for cleaning and sorting. |
| Cap.7. Cleaning and Sorting. Importance, principles, screening, aspiration; cleaning and sorting of seeds by various properties; technological flow for cleaning and sorting. Fluxul tehnologic de curăţire şi sortare a produselor. The technological flow of cleaning and sorting products. |
| Cap.8. Preservation methods. Dry storage, low temperatures, dehydration, refrigeration, natural and active aeration, self-preservation, chemical preservation, radiation. |
| Cap.9. Specifics of storage and preservation. Storage and preservation specifics for cereals, legumes, oilseeds, fiber products, sugar beet, potato tubers, narcotic, aromatic, and medicinal plants. |
| Cap.10. Monitoring During Storage (diseases and pests in storage facilities: prevention and control; dust control; thermal monitoring of storage spaces and products.). |
| Cap.11. Losses during transportation, handling, preservation, and storage; utilization of stored products. |
| Cap.12. Safety regulations during reception, conditioning, preservation, and storage; fire prevention and firefighting protocols. |

|  |
| --- |
| **Practical works** |
| **1.Seed quality control** (determination of purity, hectoliter mass, moisture content, thousand kernel weight, specific weight, vitreousness, and germination). |
| **2.Morphological, anatomical, and biochemical characteristics of agricultural products.** |
| 3. **Determination of agricultural product uniformity.** |
| **4. Determination of visible and invisible pest infestation.** |
| 5. **Calculation of losses during the conditioning and storage of agricultural plant products.** |
| 6. **Final colloquium for knowledge assessment.** |

**Bibliography**

1. Axinte M. et al. - 2002 - **Crop Science: Crop Science, Practical Workbook, Part I,** U.S.A.M.V. Iaşi, internal use, 1986.
2. Mogârzan Aglaia, Robu T., 2005 – **Technology for Storing Agricultural Plant Products,** Ion Ionescu de la Brad Publishing House, Iaşi.
3. Mogârzan Aglaia, Robu T., Zaharia M., 2010 – **Crop Science, Practical Workbook,** Ion Ionescu de la Brad Publishing House, Iaşi.
4. Zaharia M. et al., 2011 – **Crop Science, Laboratory Manual**, Ion Ionescu de la Brad Publishing House, Iaşi.
5. Puiu I., Robu T., 2023 - Crop Science: Cereals, Ion Ionescu de la Brad Publishing House, Iași, ISBN 978-973-147-506-6.
6. Lungoci C., Puiu I., Robu T., 2024 - **Practical Workbook: Medicinal, Aromatic, Spice, and Dye Plants,** Ion Ionescu de la Brad Publishing House, Iași, ISBN 978-973-147-517-2.

**Final evaluation**

|  |  |  |
| --- | --- | --- |
| **Evaluation forms** | **Assessment methods** | **Percentage of final grade** |
| **Exam** | Written evaluation | 60% |
| **Assessment of semester activity** | Attendance at practical work | 10% |
| Attendance at lectures | 15% |
| Practical work colloquium | 15% |

**Contact Person**Assoc. Prof. Dr. Ioan PUIU
Faculty of Agriculture - IULS
3, Mihail Sadoveanu Alley, Iași, 700490, Romania
Phone: +40 232 407524

E-mail: ioan.puiu@iuls.ro Modalități

inală