האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

FRUIT AND VEGETABLE STORAGE - 71069

Last update 24-09-2024

HU Credits: 2

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Biochemistry & Food Sciences

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: Rehovot

Course/Module Coordinator: Prof. Victor Rodov

Coordinator Email: vrodov@agri.gov.il

Coordinator Office Hours: By appointment

Teaching Staff:

Dr. Victor Rodov

Course/Module description:

The course is based on the fundamental vision of harvested commodities as living plant organs that continue their biological activities after separation from the whole organism and its natural environment. During the course students will learn major physiological processes taking place in the harvested organs in their interaction with biotic (pathogenic microorganisms) and abiotic (temperature, humidity and atmosphere composition) factors of the postharvest environment. Knowledge of basic biological requirements of the detached organs will allow understanding the postharvest technology as measures to maintain viability (&eq; “freshness”) of these organs. The course will comprise three blocks, devoted to (a) basics of postharvest physiology and pathology, (b) general principles of postharvest technology (postharvest treatments and storage conditions) and (c) realization of these principles in postharvest handling practices of several groups of commodities of commercial importance.

Course/Module aims:

(a) To provide knowledge about biological basis of postharvest life of fruits, vegetables and flowers; (b) To provide knowledge about postharvest technologies of handling fresh produce based on the understanding of the biological processes

Learning outcomes - On successful completion of this module, students should be able to:

• Understand the major factors that determine the keeping quality of fresh produce during storage, transportation and marketing
• Know the principles of applying major postharvest treatments to control postharvest physiological and pathological spoilage of fresh produce
• Optimize storage environment conditions (temperature, humidity, atmosphere composition) to extend the lifespan of various fresh commodities

Attendance requirements(%):

80

Teaching arrangement and method of instruction: Lectures, feedback questionnaires on a studied topic after each lecture; field trip to a packing house; preparing a summary of storage technology of a selected commodity by independent work with professional literature.

Course/Module Content:

- *Introduction. Fresh produce spoilage factors*
- *Regulation of postharvest senescence and ripening*
- *Postharvest diseases and approaches to their control*
- *Postharvest environment: temperature effects. Chilling injury*
- *Cooling methods of fresh agricultural produce*
- *Postharvest environment: humidity effects*
- *Postharvest environment: atmosphere composition*
- *Extending life of fresh produce: biotechnological approaches*
- *Examples of storage technologies: immature fruit vegetables*
- *Examples of storage technologies: mature fruit vegetables*
- *Examples of storage technologies: citrus fruits*

Required Reading:

Will be presented at the class

Additional Reading Material:

Will be presented at the class

Grading Scheme:

Essay / Project / Final Assignment / Home Exam / Referat 25 %

Submission assignments during the semester: Exercises / Essays / Audits / Reports / Forum / Simulation / others 75 %

Additional information:

The lectures will be recorded and become available after the lesson. After each lecture, a multiple-choice quiz on the lecture topic will be available in Moodle. The quizzes will stay available until the end of the course and their results will provide 75% of the final score. At the final part of the course, the participants will prepare an independent work on storage conditions of a chosen commodity. The evaluation of this work will determine 25% of the final score. No final exam will take place this year.