



e-learning Modules Developed as Innovative Food Study Materials through the ISEKI_Food Projects

Ferruh Erdogdu, Semih Otlas, Paola Pittia, Cristina L.M. Silva and Gerhard Schleining
ISEKI_Food4 Team

Introduction:

- **e-learning** refers to the use of technology in learning and education. There are several aspects to describe the intellectual and technical development of **e-learning**, and these aspects can be categorized into discrete areas.
- One of the main objectives of the working packages of the past and ongoing **ISEKI_Food projects** on `Teaching Materials & Methods` is the preparation of e-learning modules on different topics of the food science - technology - engineering disciplines.

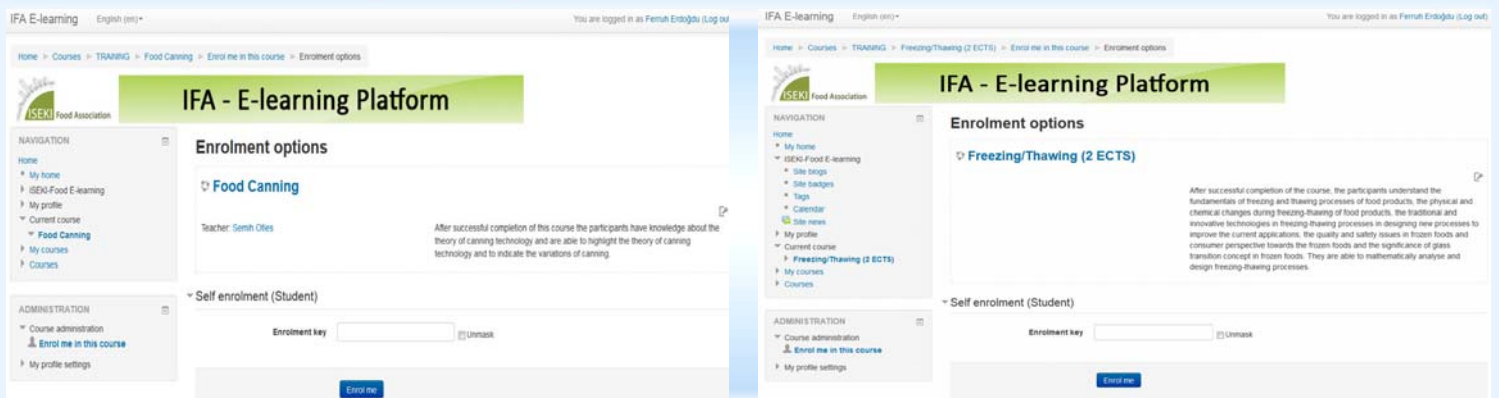
Currently available e-learning modules are:

- canning,
- food packaging,
- freezing – thawing,
- residue processing for a sustainable food industry, and
- innovative technologies in food processing*.

Contents:

- | | |
|-----------------------------|----------------------------------|
| 1- Introduction | 7- Ohmic heating |
| 2- Pulsed electric field | 8- Infrared |
| 3- High pressure processing | 9- Microwave and radio frequency |
| 4- Ultraviolet light | 10- Non-thermal plasma |
| 5- Irradiation | 11- Consumer acceptance |
| 6- Ultrasound | |

*(developed during ISEKI_FOOD4)



Methodology:

To develop an e-learning module,

- First, table of contents was **prepared** and **discussed** with all partners in various face-to-face project and virtual meetings.
- After defining the table of contents, a **call** for partners with expertise in the given specific topic was open for preparation of the electronic teaching material on the given specific subject of each module.
- All the chapters for each module were **reviewed by experts** before their final launch.

Conclusions:

- Each module has been designed with specific learning outcomes and ECTS, and included a number of chapters with a series of self-evaluation questions (**multiple choice and/or T/F questions**).
- Each module develops in various chapters of process - technology, impact on quality - safety and latest developments.
- Being the topics in general referred to food processing, learners and trainees required a **proper mathematical and scientific background** of unit operations.
- Along with reduced learning time and other aforementioned benefits to students, **particular advantages** of e-learning modules included on-demand availability, self-pacing, interactivity and confidence.
- e-learning courses related to one of the special topics in food science and technology might be regarded to be an ideal way for food students and industry for qualifying in these fields.