



Course title: FRUIT AND VEGETABLES FREEZING AND PROCESSING

ECTS credit allocation (and other scores): 5

Semester: autumn

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Agricultural sciences

Language: English

Number of hours per semester: 55

Course coordinator/ Department and e-mail: Sylwester Czaplicki/ Chair of Plant Food Chemistry and Processing, sylwester.czaplicki@uwm.edu.pl

Type of classes: classes

Substantive content

CLASSES: Development of basic technological recipes in fruit and vegetable processing. Raw material pretreatment. Influence of thermal treatment (blanching and cooking) and reaction on deactivation of enzymes and changes of color of fruits and vegetables during the preservation. Influence of pH on preserved vegetable color. Application of enzymes in fruit and vegetable processing on the example of pectolytic preparations in the juice industry. Evaluation of physicochemical properties of gelling and thickening preparations. Influence of thermal treatment on the physical and chemical properties of fruit and vegetable purées.

LECTURES: Characteristic of fruit and vegetables as a material in food industry. Work organization in fruit and vegetables processing plant. Chemical characteristic of fruit and vegetables. Raw material pretreatment. Purpose and methods of blanching fruits and vegetables. Fruit and vegetables with minimal processing. Freezing technology. Technology of purées and related products. Technology of juices and concentrates. Technology of jams and other high sweetened food. Influence of enzymes in fruit and vegetable processing on products physical properties. Changes in chemical composition during conventional, vacuum, lyophilization and infrared drying.

Learning purpose: Production of fruit and vegetable preserves, purees and juices, product designing skills, preparation of recipes.

On completion of the study programme the graduate will gain:

Knowledge: Knows and understands individual technologies for processing fruit and vegetables.

Skills: Can to determine the quality of fruit and vegetable and discuss the basic operations: pretreatment and processing.

Social Competencies: Is ready to analyze the environmental impact of the fruit and vegetable processing industry.

Basic literature:

Food Processing Handbook. Edited by James G. Brennan, 2006 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim, Germany.

Handbook of vegetables and vegetable processing. Edited by Nirmal K. Sinha, 2011, Blackwell Publishing, Iowa, USA.

Handbook of fruits and fruit processing. Edited by Y. H. Hui, 2006, Blackwell Publishing, Iowa, USA.

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 55 (CLASSES: 45 h, LECTURES: 10 h)



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Student's independent work: 70