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**Syllabus**

**BSc Food Science and Technology**

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| **Subject** | **FUNDAMENTAL PROCESSES IN THE FOOD TEHNOLOGY** |
| **Type** | **Semester** | **ECTS** | **Code** |
| Mandatory (M) | 3 | 5 | 130BPFT202 |
| **Course Lecturer** | Prof. Dr. Violeta Lajqi Makolli:  |
| **Course Assistant** | Prof. Dr. Violeta Lajqi Makolli:  |
| **Course Tutor** |  |
| **Aims and Objectives** | The lesson aims is to provide students with knowledge into the basic concepts of processes, moving of the amount of fluid motion and fluid mechanics - fluid flow, heat transfer in food technology processes, heat exchangers, microwaves heating, irradiated energy, mass transmission in food industry processes, diffusion, convection, raw material preparation, crushing, grinding, mechanically separation processes, decantation, centrifugation, filtration, crystallization, mass exchange processes, phase concentrations, absorption, distillation, extraction, pasteurization and thermal sterilization etc. |
| **Learning Outcomes** | At the end of the lesson students should be able to: • Calculate the various problems in the processes of food processing, • Solved the main equations of fluid fluidity in the liquid product processing industry,• Solved heat transmission problems in food technology processes, heat exchange and mass transmitting.• Solve the preparatory processes for raw materials, the processes of separation and mass exchange processes, etc. |
| **Course Content** | **Course Plan** | **Week** |
| 1. Introduction, presentation of the syllabus, presentation of basic concepts
 | 1 |
| 1. Moving of the amount of fluid motion and fluid mechanics, fluid flow, Reinolds
 | 2 |
| 1. Pumps, compressors and fans in the food industry
 | 3 |
| 1. Heat transmission in food technology processes: by conduction, convection, radiation.
 | 4 |
| 1. Heat exchangers and microwaves heating
 | 5 |
| 1. Transmission of mass in the food industry processes: by diffusion, convection
 | 6 |
| 1. Raw materials and solid matter preparation processes: crushing, grinding, milling.
 | 7 |
| 1. Mixing and emulsifying, homogenization
 | 8 |
| 1. Mechanical separation processes; decantation, centrifugation
 | 9 |
| 1. Mechanical separation processes; filtration, crystallization
 | 10 |
| 1. Processes of preserving food products through thermal treatments; pasteurisation and thermal sterilization.
 | 11 |
| 1. Drying process and drying equipment, lyophilization
 | 12 |
| 1. Presentations
 | 13 |
| 1. Presentations, Repetition of the subject or study visits
 |  14  |
| 1. Final Exam
 |  15 |
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| **Literature/References** | 1. Internal script
2. Anila Kopali, Ilir Malollari, Proceset themelore në teknologjinë ushqimore, Tiranë, 2007, 2012, 2015
3. P.G. Smith; Introduction to Food Process Engineering; Second Edition; Springer New York Dordrecht Heidelberg London, 2011
4. Singh,P.R. and D.R.Heldman: Introduction of Food Engineering, 3th ed., Academic press, San Diego, 2001.
5. Stavros Yanniotis: Solving Problems in Food Engineering: Department of Food Science and Technology Agricultural University of Athens Athens, Greece: @ 2008 Springer Science + Business Media, LLC
6. Geankoplis, J.C.: Transport Processes and Unit Operations, Allyn and Bacon, Boston,1978.
7. Zeki Berk: Food Process Engineering and Technology, 2009
8. R. Paul Singh & Dennis R. Heldman (2020) Introduction to Food Engineering, fourth edition. Academic Press is an imprint of Elsevier
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**Academic integrity policy and rules of conduct:**

within the course, for zero tolerance to plagiarism, copying in exams, or copying in group presentations and other learning activities. The Code of Conduct lists the behaviours allowed during the discussion, the lesson, interactivity with the teacher, etc. Cell phones (smartphones) and other electronic devices (e.g. iPods) must be turned off (or set to vibrate) and not displayed during class. Following the rules and instructions of the academic staff regarding the performance standards emphasized by the professors during the presentation of the curriculum;

Students should treat each other with respect and foster an environment of honesty, ethical behaviour and mutual respect.