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| **Subject**   | **MEDICINAL AND AROMATIC PLANTS**  |
| **Type**   | **Semester**  | **ECTS**  | **Code**  |
|                           Z   |         VI  |          4 (2+1)  |  130AMP366 |
| **Course Lecturer**  | **Ismet Babaj, PhD**  |
| **Course Assistant**  | **Ismet Babaj, PhD**  |
| **Course Tutor**  |   |
| **Aims and Objectives**  | The aim and objectives of this course are for the student to recognize the importance, prevalence, nutritional values, and curative trends of the production, processing, and consumption of MAPs. Classification of medicinal and aromatic plants, climatic and soil factors requirements, techniques and production plans of MAPs, fertilization, irrigation, crop rotation, etc. In addition, during this course, the main MAP species produced destinated for processing, and finalization for the domestic and international market as raw material and final product. Cultivation of annual and perennial MAP crops with particular emphasis to the market approach. For each of these species, the following basic aspects will be considered: the origin, importance, dissemination, and development perspectives; botanical and biological characteristics; eco-physiology (climatic, pedological and nutritional requirements); cultural techniques (planting, transplanting, cultural techniques administration), harvesting and post-harvesting techniques, storage, packaging, processing and transportation  |
| **Learning outcomes**  |  After completing this course (subject), the student will be able to: * To realize the basic knowledge of the production of MAPs in general.
* Distinguish the types of MAPs and their importance in food technology,
* To understand the importance of climatic and soil factors in the cultivation of annual and perennial MAPs
* MAPs management during the cultivation period and their use.
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| **Alignment of Course’s Learning Outcomes to Programs Learning Outcomes.**  | 1. Application of theoretical knowledge: - BSc program. (Outcome 1, 2, ): Possess and understand advanced knowledge in food chemistry, microbiology, engineering and sensory evaluation, using this understanding to create, process and preserve healthy, safe and quality food items up. - To apply advanced techniques, methods, tools and instruments in the processing, analysis and safety assessment of food products, ensuring compliance with food laws and regulations. 2. Evaluation and critical analysis: -BSc Program (Outcome 3, 4,5,6,7,8,9): Analyze, evaluate and interpret food science data, including research literature, ensuring that findings are innovatively and ethically communicated to an audience different, from colleagues to the general public. -Demonstrate understanding and technical competence in basic nutrition principles, distinguishing between different food components and their health implications. - Organize and convey technical and relevant information effectively, orally and in writing, ensuring clarity and accuracy to a diverse audience, including supervisors, peers and customers. - Execute and lead research projects in food science, navigating the complexities of nutrition and exercise science, particularly when addressing ethical, cultural and environmental dimensions. - Interpret, compare and classify findings from food science research, ensuring that decisions and results conform to established standards and best practices. - Exercise autonomy and initiative in identifying health-related interactions between dietary nutrients and exercise, designing optimal dietary and exercise programs to maintain health. - Address and solve complex problems related to food processing, utilizing integrated knowledge from different fields of food science. 3. Development of practical skills: BSc Program (Outcome 7,8 and 9): - Interpret, compare and classify findings from food science research, ensuring that decisions and results conform to established standards and best practices. - Exercise autonomy and initiative in identifying health-related interactions between dietary nutrients and exercise, designing optimal dietary and exercise programs to maintain health. - Address and solve complex problems related to food processing, utilizing integrated knowledge from different fields of food science. 4. Evidence-based approach: BSc program (Outcome 9 and 10): - Address and solve complex problems related to food processing, utilizing integrated knowledge from different fields of food science. - Engage in continuous learning, staying up-to-date with the latest trends, challenges and innovations in the field of food science, nutrition and exercise science.   |
| **Content**  | **Weekly plan**  | **Week**  |
| Development history, nutritional, curative and classification of medicinal and aromatic plants (MAP’s) plants (MAPs)  | 1  |
| Environmental factors and their impact on the growth and production of MAP’s  | 2  |
| Basic requirements for organic production and production methods of MAP’s  | 3  |
| MAP’s cultivation systems  | 4  |
| Propagation of MAP’s  | 5  |
| Cultivation annual MAPs - Chamomile cultivation (Matricariae flos)  | 6  |
| Presentation of Seminars  | 7  |
| Cultivation of Cyan (Centaurea cyanus) and Calendula (Calendulae flos)  | 8   |
| Cultivation of Black Mulberry (Malva sylvestris L., flos)  | 9   |
| Cultivation of perennial MAPs - cultivation of Sage (Salvia officinalis L.)  | 10    11  12  |
| Cultivation of Nettle (Urtica dioica)  | 11  |
| Peppermint Cultivation (Mentha piperita, Menthae piperitae folium)  | 12  |
| Cultivation of Oregano (Origanum vulgaris) and Melissa (Melissa officinalis L.)  | 13  |
| Presentation of case studies  | 14  |
|   | Final assessment  | 15  |
| **Literature/References**  |  1. Akos Mathe, (2015); Medical and Aromatic Plants of the World. University of the West Hungary, Budapest, Hungary 2. Bogers., Robert J., Craker., Lyle E., Lange, Dogmar (2007): Medical and Aromatic Plants. Publisher Springer Netherlands. 3. Brochure for MAPs published by the Association of MAPs Processors and Exporters, Prishtina <https://organika-ks.org/en/publications/>   |
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