

FACULTY OF ENGINEERING
Together for the Engineers of the Future

Courses Offered for IISMA 2024 Awardees

The faculty - in accordance with today's needs - is the one of the most important bases of engineering education at the University of Szeged and in the Southern Great Plain Region with its highly qualified experts in possession of academic degrees, and with modernly equipped training rooms and laboratories. The Faculty trains at the BSc, MSc levels in numerous fields of engineering sciences: Food Engineer, Mechanical Engineering, Agribusiness and Rural Development Engineer, Mechatronical Engineer, Mechanical Engineer in Agriculture and Food Industry, Engineering manager.

Course Code	Name of Course	Short Description	Expected Competencies	No. ECTS Credits
Y-IISM1091	Dietetics	The goal is to learn the basics of nutrition. Subject: Students will learn about the important micro and macro nutrients, their importance. In connection with this, they learn about the effects of deficiency or over intake and their prevention (and the possible treatment in a natural way). Energy and nutrient requirements. Physiological and biochemical processes in the body. Nutritional recommendations for a healthy adult population. Work-meal, water-physiological effect.	Novel and adaptive thinking	4
Y-IISM1001	Food safety	Aim of the course is to introduce basics of food safety. How can be produce food for human consumption taking the strict food safety background, which is authorized worldwide? Subjects: Definitions: definition of food, food safety. Food safety in the EU: EC regulation 178/2002. Principles of the general food law. EFSA and RASFF. HACCP. Risk assessment, management and communication. Principles of HACCP. „From farm to fork” concept: Agriculture: food safety aspects of crop cultivation and husbandry. Food safety aspects of food processing. GMP, GHP, new technologies. Distribution of foods. Food retail. Food safety aspects for the catering industry and for home made foods. Hygiene: Cleaning and disinfection in the food industry. Hygiene at home.	Social Intelligence, novel and adaptive thinking, cross cultural competenc+14:16y	4
Y-IISM1071 + Y-IISM1072	Quality control	Aim of the course is to introduce the main points of quality control, which belongs to different business sectors too. Subjects: Understanding and Interpreting Quality. The Meaning of Quality – Concepts, Dimensions and Standards of Quality; The Evolution of Quality Management; Quality Management Systems: Approaches and Principles; Improving Quality: Quality Control Tools and Techniques; Economic Aspect of Quality; Quality Control in the Food Industry; Complex food quality; Quality and value creation; Students’ presentations – Students should prepare and deliver presentation about topics that are related to quality control; Teamwork – working in groups to solve problems related to quality control and elaborating case studies; Research Paper Studies – Technical papers will be assigned to the class, and Students are required to study these papers and write summary reports.	cognitive load management, social intelligence	4
Y-IISM1011	Meat and meat technology	Aim of the course is to introduce most important parts of meat products technology. Meat and meat products are consumed worldwide. Modernization of technologies is essential for the production of quality product. Traditional and modern methods are introduced to students once in the course. Subjects: Physical, chemical, microbiological and histological characteristics of meat, conversion of muscle to meat, preservation methods; meat refrigeration and freezing technologies, meat processing technologies; curing, smoking, emulsification, fermentation, canning, restructured meat products, meat packaging technology, quality control analysis in meat and meat products.	Novel and adaptive thinking	4

Y-IISM1061 + Y-IISM1062	Environmental economy	The aim of the course is to give general knowledge of natural resources, market failure of natural resources, environmental problems, environmental systems, technical description of environmental technologies and possible solutions, water and wastewater treatment processes, waste management, waste to energy concept, biomass utilization, renewable energy sources. Subjects: Overview of Environmental Problems and Economy. Basics of Environmental Management. Renewable Energy Sources. Waste and By-products Streams in Food Processing Technologies. By-product Utilization in Food Industry. Controlled biological treatments and processes for bio-waste handling and utilization. Overview of Waste to Energy (W2E) Concept. Environmental Pollutants (source, types). Basics of Wastewater Treatment Technologies. Novel Processes in Food Industry Wastewater Purification. Basics of Air Purification Methods.	Transdisciplinary, novel and adaptive thinking, sense-making	4
Y-IISM1021	Elements of marketing	Aim of the course is to learn more about marketing and advertising. Students have exercises how to use marketing tools in practice. Subjects: Introduction to marketing and advertising: Jobs and responsibilities. Corporate identity, logos, Branding Finding the customer: Market research, Customer profiles, Data collection, A telephone survey Planning a marketing strategy: The marketing plan The four Ps, Pricing and positioning strategies Creating ads: The AIDA model for advertising, Working with an ad agency, Advertising channels, Rate sheets Marketing tools: Distribution channels, Types of discount, Types of retailer, Telemarketing, Direct marketing Presenting your public face: Public relations, Websites as a marketing tool, Sponsoring, Effective press releases Marketing through trade fairs: Giveaways, Organizing events, Attending a trade fair.	Novel and adaptive thinking; social intelligence, design mind-sets	4
Y-IISM1081 + Y-IISM1082	Workshop training in microbiology laboratory	The aim of the course is to introduce the microbiological methods, which is necessary to use during the food production and these results of inspection decide the suitability of food for human consumption. In addition, the students can try the different conventional and rapid tests. Subjects: microbiological examination of food and hygiene (pathogens and spoilage microbes with conventional – MPN methods, pour plate methods, spread plate methods - and rapid tests; air, water and surface hygiene; rapid test for allergens and mycotoxins).	virtual collaboration	4
Y-IISM1032	Logistics	Aim of the course is to introduce the logistics, basic definitions and terminology. Some practical aspects are also part of the subject. Subjects: Introduction to logistics: Setting the scene. Job in logistics; Regular activities Logistics services: Logistics acronyms; Product ranges; providers; Value-added services; Inventory management and procurement: Inventory management; Continuous replenishment; Job advertisements Modes of transport: Transport and handling equipment; Container types, Types of goods Planning and arranging transport: Transport options, Measurements, Quotations Shipping goods: Marking, Loading, Advice of shipment, Shipping instructions Warehousing and storage: Handling equipment, Warehouse areas, Warehousing today Documentation and finance: Documents in foreign trade, Import instructions, Payment methods. Logistics in agro-food business.	Novel and adaptive thinking; social intelligence, design mind-sets	4
Y-IISM1041	Human factors in agri-food sector	Aim of the course is to introduce the human resource management. Some practical aspects are also part of the Course. Subjects: What is HRM? Basics of the HRM. Understanding the logic of the management of the human resources. Challenges and new aspects of the topic. E.g. focusing on engineering aspects, managing the elderly workforce at the BMW car manufacturer, creativity management and its connections to engineering dimensions, complexity management affecting the HRM.	Social intelligence, design mind-sets	4
Y-IISM1102	How it's made or work in practice?	Aim of the course is to introduce operation of some enterprises, factories, production and their some traditional products. Visiting special industrial buildings and using modern public transport vehicles. Subjects: visiting different factories (e.g. food, drink, construction materials); introduction of tram-train and hybrid trolleybuses, old milling building; know some information from different equipment, which is used in factories. Environmentally friendly technologies, e.g. using thermal water for different purposes in production and service.	transdisciplinary, sense-making, social intelligence, novel and adaptive thinking	4