

FH | JOANNEUM

University of Applied Sciences

Fh Joanneum's Institute of Dietetics and Nutrition provides a range of courses on nutrition and dietetics. We invited the Head of the institute, Elisabeth Pail, to talk us through these courses.

The Institute of Dietetics and Nutrition consists of the Bachelor degree programme "Dietetics and Nutrition", the Postgraduate course "Applied Nutrition medicine" and the "Health Perception lab – Laboratory for Health and Sensory research". Elisabeth provides an outline of each course and highlights the knowledge it aims to impart.

"Our Dietetics and Nutrition Bachelor course covers the scientific fundamentals of this field and the requirements of society and the economy. The interplay of theory and practice is a key element. We strive to provide our students with the best possible conditions for starting out in their professional life or continuing onto a master's course, based on broad and subject-specific training.

"The postgraduate course in Applied Nutrition Medicine is specifically geared towards dietitians and doctors. The university course, which is unique in Austria, is run jointly by the Medical University of Graz and FH JOANNEUM as part of an innovative cooperation model. The programme aims at providing participants with scientific and practical training in applied nutritional medicine. It focuses on interdisciplinary cooperation between dietitians and doctors and the mutual exchange of skills and experience.

In addition, our Health Perception lab is a laboratory for health-relevant sensory research. The prime focus is on examining beneficial foodstuff by means of hedonic sensory analysis using modern technical aids. In a current study we are focusing on taste development and preferences of children (pre- and postnatal) and their mothers in the area of obesity prevention. The lab is seeking to make a mark in the sector of obesity prevention and treatment via the interdisciplinary orientation of 8 institutes at the FH JOANNEUM (Lead: Dietetics and Nutrition; Research Partners: Biomedical Science, Midwifery, Health Management in Tourism, Occupational Therapy, Sustainable Food Management, Communication, Media, Sound and Interaction Design and Information Management). In the Health Perception lab we focus on three key research areas: Metabolic programming of obesity; Consumer science: Innovative product development; Health Promotion by teaching and learning concept."

The lab is particularly important to Elisabeth, who outlines its unique features in more detail.

"The Health Perception lab is equipped with state-of-the-art sensory cabins linked to a high-tech laboratory kitchen. Furthermore, the lab has a perception room, which is equipped with the very latest audio-visual tools, such as a mobile eye tracker, a face reader and an observation wall. One special feature is a baby tracker, which allows a baby's facial expressions and gestures in reaction to nutritional stimuli to be recorded and interpreted. This baby tracker is currently being developed and optimized. The use of Body composition tracking systems (PEA POD® & BOD POD®) makes it possible to determine the body composition of children and adults with precision, which then allows to draw conclusions about their nutritional state. The Institute of Dietetics and Nutrition is the only Institute in Austria that has both systems. So we can determine the body composition starting with the baby of 1 kg body weight to the adult. Furthermore, the lab has a sampling room where we, thanks to the close collaboration with the biomedical laboratory of the FH JOANNEUM, can determine a wide range of laboratory parameters (e.g. biomarkers and constituents) from a wide range of specimen materials (e.g. blood, breast milk).

"The Health Perception lab is a highly innovative concept and a newcomer to the Austrian sensorics landscape. The lab pursues applied sensory research with a focus on sustainable health promotion, prevention and treatment. The combination of several scientific disciplines and the modern infrastructure will lead to new ideas and initial data for future research questions. The ultimate aim is to use these resources to enable early diagnosis of childhood and adult obesity, as well as to develop innovative concepts. The individual needs and concerns of both, business and research partners across a wide range of topics can be professionally addressed."

Looking to the future, Elisabeth outlines the research areas and key focuses of the department over the coming months.

"Moving forward, in the research area we will create an additional focus in the field of "Active and Healthy Ageing". We are currently working on a project that

investigates if an olfactory and multi-sensory training can increase appetite in elderly persons. Impairment of taste and/or olfaction due to diseases and non-diseases related, are common in older adults. This could lead to reduced appetite, inadequate food intake and higher risk for malnutrition. So the reduction of Malnutrition (and Frailty) within the elderly is a big goal for the future. Eating is more than ingesting nutrients. So our aim is to increase the enjoyment of food and appetite in elderly people. The olfactory and multi-sensory training could be a new way in this field. The first aim in our study is to develop a rapid, easy to repeat method for evaluating olfactory thresholds in the elderly, because at the moment many of the existing olfactory tests are not adequate for older adult's cognitive abilities, which may be impaired by disease or other factors. So the aim of this research is to fill this gap.

"A further focus will be "Food pairing", which is a scientific method to identify which foods and drinks go well together. To understand why ingredients match, it is important to know how humans perceive flavour. Aromas are the key drivers of our flavour experience and therefore crucial for the synergy of food and drinks. In future projects we want children to inspire for this topic. Therefore, we are collaborating with Styrians Agricultural and Nutrition schools to enhance their sensitivity for flavours and to create own innovative recipes."

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