



Graduate & PhD Course

Measuring Dietary Behaviour the intelligent way

Fudan University, Shanghai

November 23--25, 2015

Why this course?

Measuring and monitoring lifestyle-related health behaviours with easy-to-use portable intelligent devices, has gained interest and popularity worldwide. Increased accessibility of these mobile technologies, including smartphones, personal digital assistants, tablet and ultra-portable computers has made these technologies more convenient for use in researchers and health care contexts. Mobile technologies can be used for monitoring health behavior, compliance and effectiveness and offers the possibility to be used in a co-creational mode where users provide input and actively participate in the creation of the service or practice. Mobile technologies uses signals, protocols and functionalities such as text messaging, GPS tracking, mobile positioning, Wi-Fi and Bluetooth. The novel technologies allow for detailed analysis for example of patterns of physical activity, food intake, addictive behaviours and environmental exposure either in real-life or in simulated environments such as virtual settings. This course gives an introduction to a range of these easy2use portable intelligent technologies and demonstrates new combinations of scales, smartphone technologies, near field communication and picture- and voice recognition to estimate food intake and to facilitate meal ordering processes. It will showcase examples of how the novel technologies can best be used in different food environments ranging from hospitals to private settings where measuring food intake is important. The course will be highly interactive to provide the participants with hands-on experience with the new devices and novel technologies. The course is organized by Nordic Centre, Fudan University and School of Public Health at Fudan University in cooperation with Aalborg University and University of Eastern Finland. It is supported by FoodServInSPIRe, Foodtura, Food4Growth and dVices4Food programs as well as the Nordic Centre, Fudan University in Shanghai.

Aim of the course

This course aims to demonstrate the range of novel easy-to-use portable forms of interactive computer technology (ICT) that can be used for studying health behaviours, dietary intake, meal ordering and consumer choice. The course provides insight into the use of novel technologies that can:





- Automate dietary intake assessment and thereby allow for automated estimation of nutritional intake as well as for food waste and environmental impact of food choice
- Facilitate the co-creation of nutritional care in social and health care services through the use of portable intelligent devices
- Simulate supermarket and buffet food choice architectures to facilitate the design of health-enhancing food landscapes (foodscapes).

Format of the course

The course is organized as a 3-day post-graduate level workshop held at Fudan University, supported by an online learning environment. The course features pre-course online learning tasks, in-class demonstrations of novel intelligent devices and technologies combined with scientific presentations on their application in the study of food behaviours, service and choice. First day of the course will include introduction to the course, expert presentations and demonstrations, small group tuition and team-building plus team working skills practice. During the next two days, student teams will work on cooperative learning tasks presented as case studies related to best-practice in using some of the demonstrated novel technologies. The third day of the workshop is reserved for collaborative knowledge-building and –sharing based upon team presentations on best-practice and novel solutions. Expert guidance will be provided by the lecturers and researchers participating in this collaboration. The course will utilize a blended learning approach in a highly collaborative learning environment.

Pre-course learning tasks

Getting to know each other. Online introductory learning tasks will be moderated according to Gilly Salmon's 5-stage model of e-learning with the aim to introduce the students to each other prior to the in-class sessions and to ease the future team-building and collaboration in class. Online tasks will introduce the main learning tasks and materials in this course and will require internet/email access to support communication between international participants. Pre-course (online) learning tasks are moderated by Dr. Irja Haapala-Biggs, University of Eastern Finland.

Learning portfolios

Online personal learning portfolios will be used to support student learning throughout the course. Each student will start their personal learning portfolio as part of the pre-course learning tasks (see above), add to it daily during the course and complete it after the course to reflect on their overall learning in relation to this course.





Expected outcome

Students in this course will be able to demonstrate knowledge on evidence-based best practice in the use of novel technologies in monitoring lifestyle-related health behaviours at the public and private level and for research purposes. Students will become part of a global network of practitioners and experts in the field of measuring and affecting health behavior and architectures in complex foodscapes through ICT-assisted methods. ECTS: 3,8

Programme and lecturers

The course programme and lecturers are introduced on the next two pages.



FOODSCAPE LAB





PROGRAMME

Monday, November 23

10:00 *Welcome.* Gengsheng He, Professor & Assistant Dean, Fudan University

10:20 *Introduction to the course*

- Bent Egberg Mikkelsen, Professor, Aalborg University & Irja Haapala-Biggs, Senior Lecturer, University of Eastern Finland

11:00 *Why monitoring food intake in hospital foodscapes*

- Monitoring food intake among hospital patients – case of Huadong Hospital. Jianqin Sun, Professor, Fudan University Hospital
- Why is it important to monitor intake among hospital patients? Case of Zhongshan Hospital, Gengsheng He, Professor, Fudan University

12:30 Lunch

14:00 *New methods for monitoring intake the intelligent way*

- Monitoring behavior intelligently – a new focus on self-monitoring and choice architectures, Bent Egberg Mikkelsen, Professor, Aalborg University

15:00 *Mobile technologies for self-reporting of food intake and life style behaviours*

- Weight management using mobile phone technology. Irja Haapala-Biggs, Senior Lecturer, University of Eastern Finland

16:00 *Tracking PA and dietary behavior with wearable camera technologies*

17:00 End of day one

Tuesday, November 24

9:30 *Methods for monitoring intake in hospital foodscapes*

- Yan Wang, Clinical Dietitian, Nutrition Department, Huadong Hospital & Kuang Zhichao, PhD student, Food Technologist, Department of Nutrition and Food Hygiene, School of Public Health, Fudan University. Both are graduates and





participated in PhD course on ICT Assisted Methods for Measuring Behaviour & Architectures in Complex Foodscapes, Aalborg University, Copenhagen, August 2015.

10:30 *Measuring impact of choice architectures – the intelligent way*, Bent Egberg Mikkelsen, Professor, Aalborg University, Denmark

11:15 *Dietary assessment in adolescents – traditional and an overview of new intelligent ones*. Rosangela Peirera, Assoc Professor, University of Rio de Janeiro, Brazil

12:00 *Smart buffet – a new solution for providing customers with accurate nutritional value information* Teija Rautiainen, Research manager, Mikkeli University of Applied Sciences, Finland

12:25 *What it takes that Smart buffet becomes Smart(er) - system integrations & future views* Pertti Harju, Research Engineer, Mealvation, Finland

12:50 *Tracking consumer in food environments with the Tracklab technology*, Chengfang Wang, General Manager, PhD; Noldus China

13:15 Lunch

14:15 *Simulating food environments - Virtual reality in health promotion. Case of the Virtual Food Choice Simulator (VFCS)*, Bent Egberg Mikkelsen, Professor, Aalborg University, Denmark

14:35 Course assignments. Students will initiate work in groups and prepare a protocol to be used with ICT assisted devices. Continue work in groups.

16:30 End of day

Wednesday, November 25

9:30 Continue work in groups

12:30 Lunch

14:00 Student presentations in plenary

16:00 Close and farewell.





Assessment and certificates

Summative assessment will be carried out in collaboration between the course leaders from Fudan University, Aalborg University and the University of Eastern Finland. Assessment (Pass/Fail) will relate to the pre-course learning tasks, participation in group work and completion of the collaborative assignment. A further assessment one month later will be carried out via email/online in order to assess practical use of the material learned in this course. Evaluation of the course will be carried out at the end of the course to gather feedback and further suggestions for improvement from the participants. Certificates upon the completion of the course and its learning assignments will be issued jointly by Fudan University, Aalborg University and the University of Eastern Finland.

Global Network of Experts

All graduates will be invited to join an ongoing global network, established in 2015, for collaboration in the field of measuring and affecting health behaviour and architectures in complex foodscapes through ICT-assisted methods.

Addresses:

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