Course	Smart Human Sensing
Course No.	02RB237
Credits	2.0Credits
Grade	1, 2Year
Timetable	SprAB Thu1,2
Instructor	Naoto Wakatsuki, Tadashi Ebihara, Keiichi Zempo, Yuka Maeda
Course Overview	The technologies for sensing conditions, behaviors, and intentions of human using sensors, communication technologies, data analyses and modeling methods are explained. The application of these technologies are also introduced.
Remarks	Those who do not belong to the PhD program in Empowerment Informatics need the permission of the instructor to register.
Course Type	lectures
Course Remarks	This lecture is basically held in Japanese (with English slides). English translations will also be given on demand. Q&A in English is welcome. A minimum of two students are required.
Relationship to EMP Educational Objectives	Interdisciplinary ability:Broad education and ability to see the big picture
Course Objectives	To learn the basic knowledge of the elemental technologies such as sensors, biometric, data processing, and communications. Optionally, to suggest a system for sensing human status by combining elementary technologies for some applications.
Course Schedule	1)Introduction 2). Attention points in human-related researches - Helsinki Declaration Measurement principles of biological informations for human status monitoring systems and human-body communications - Electrocardiogram - Blood pressure 3). Sensing of human behavior - Direct methods (based on the measurement of motion related event) - Indirect methods (estimation by imitation of human behavior) 4). Network system that supports sensing - Realistic applications for wireless sensor networks - Characteristics of wireless communication for sensor networking Design of wireless sensor networking system 5). Application of sensor data and large scale data: - Bayesian networks and Probabilistic latent semantic analysis - Recommendation Engine

	6). Term-end exam. 7)
Graduating Methods and Criteria	term-end exam.
Homework	
Textbook	Not specified.
References	
Office Hour	Any time (prior appointment is required)
Messages for Students	
Teaching Fellow / Teaching Assistant	
Keywords	Sensors, Networking, communication, status, monitoring, signal, Processing, and, data, processing.