Ph.D. in Health Science, Technology and Management

Teaching Activities XXXVIII Cycle - a.y. 2022/2023

Attendance Rules: attività formative 1° anno obbligatorie

Lecturer	Co-Lecturer (if any)	Title of the Course	Brief description	Language	Hours	Compulsory
C. A. Avizzano	√	Modelling, data acquisition and manipulation using Python	The course "Modelling, data acquisition and manipulation using Python" has the main objective to introduce phd students with the python language. In particular, it will deal with the issues related to the development of the environment and the installation of the procedure. During the course phd students will be called to understand how to classify types of data and data access, they will be called to basic concepts of object programming using Python syntax and they will acquire basic program skills.	ENG	10	√
N. Bellè	√	Principles of behavioral science in healthcare management	The course "Principles of behavioral science in healthcare management" aims at providing students with a comprehensive overview of behavioral and experimental research in healthcare management, broadly defined. More precisely, we will explore the micro-level perspective of individual behavior and attitudes by drawing on insights from across the behavioral sciences – including management, economics, public policy, and psychology. The course provides basic elements to understand the principles of behavioural science applied to the healthcare context. Case study and evidence from the field will be discussed in class.	ENG	10	√
M. Bergamasco		Introduction to Human Perception; from Ordinary to Mixed and Virtual Reality (I)	The objective of the course "Introduction to Human Perception; from Ordinary to Mixed and Virtual Reality (I)" is to provide an introduction to the philosophical, biological and psychophysical bases of Human Perception. The focus is given on the visual perception processing stages and the influence of attention in perceptual tasks in the healthcare context. Hence, this course will provide the basic elements to attend other advanced courses related to virtual reality and human perception in healthcare environment.	ENG	10	√
P. Castoldi		Information and Communication Technologies (ICT) for e-health and telemedicine	The objective of the course "Information and Communication Technologies (ICT) for e-health and telemedicine" is to introduce phd students to the information and communication technologies and networking paradigms. In particular, phd students will be called at discovering the basic elements related to the enabling medical services at distance. Hence, at the end of the course phd students will be able to correctly use the taxonomy related to medical services at distance in the cases of e-health and telemedicine.	ENG	10	√

M. Emdin	C. Passino	Medical Reasoning: Pathophysiology, Technology and Ethics (I)	The Course provides an overview of the practice of medicine as a product of both art and science, balcing the understanding of the mechanisms underlying disease processes with the use of scientific evidence in making patient care decisions. Through clinical case discussion, and further generalization, a focus will be provided on clinical expertise, use of technological innovation, medical knowledge organization, the directionality of reasoning, as well as ethical issues related with the decision-making processes in medicine.	ENG	10	√
M. Gagliardi		Introduction to Civil Liability and Risk Management in Healthcare Systems	The course "Introduction to Civil Liability and Risk Management in Healthcare Systems" will give students the basis about the law of civil liability in healthcare. It aims at showing the effects of important health or systemic stress (such as the one caused by Covid 19 experience) on healthcare systems and their risk management implications. Through this course the PhD students are called to understand the basic elements and principles of civil liability in the healthcare context. Case studies and evidence from the field will be discussed in class.	ENG	10	√
A. Menciassi		Introduction to Surgical Robotics	The course "Introduction to Surgical Robotics" will introduce the key concepts of medical robotics and it will focus on enabling technologies for computer assisted and robotic assisted intervention. In particular, PhD students will acquire the key concepts related to the robotics surgery techniques and technologies. They will be called to discuss in class some of the surgical robotics already introduced in the market and their implementation in the real-life settings paying attention to the possibilities to use innovation among different specialties.	ENG	10	√
S. Micera		Introduction to Bioelectronic Medicine	The course "Introduction to Bioelectronic Medicine" will provide a general introduction about the use of neuromodulation to restore sensory-motor, cognitive and autonomic functions in people with different types of disabilities. PhD students will be called to acquire the basic concepts to understand why, when and where bioelectronic medicine can be implemented. Hence, this course will provide PhD students with the key knowledge to be able to attend advanced courses related to Bioelectronic Medicine.	ENG	10	√
A. Mina		Introduction to Economics of New (Health) Technologies	The course "Introduction to Economics of New (Health) Technologies" focuses on the economics of technical change. It concerns the analysis of science, technology and innovation, in general and with specific reference to the problem of human health. PhD students will be called to comment articles provided before the class to better stimulating the discussion on the economics related to the new health technologies. This course will prepare for the optional advanced course on economics and innovation in health care.	ENG	10	√
G. Morgante		Criminal issues in medical malpractice	The Course "Criminal issues in medical malpractice" aims at analyzing the general and specific issues related to the definition and the practice of criminally relevant medical malpractice. In particular, the course will also discuss the role of innovation in organizational and technological issues related to the mitigation of medical malpractice as well as the mitigation of the criminal issues related to medical malpractice. During the course case studies and evidence from the field will be discussed in class.	ENG	10	√

A. Piccaluga	A. Di Minin	Introduction of Knowledge Transfer in STEM disciplines	The course "Introduction of Knowledge Transfer in STEM disciplines" aims to introduce scientists and researchers to some of the important foundations of knowledge and technology transfer. Through this course, PhD students will acquire the actionable knowledge and concrete ideas on innovation, management, strategy and intellectual property management. Knowledge transfer, especially in technological fields, is a very key issue to better understand how and when pilot projects and researches could scale up.	ENG	10	√
A. E. Pirni		Ethics, Technology and Care Relationship	The course "Ethics, Technology and Care Relationship" aims at offering a preliminary framework on some of the main ethical issues devoted to the health science domain. The main focus is dedicated to the ethics of care, with reference to the emerging technologies and their correlative opportunities and challenges for the human health. PhD students will be called to comment in class the ethical questions related to the development of the new health technologies to open the perspectives of innovation including intangible aspects of care for human being.	ENG	10	√
L. Gori	E. Vivaldi	Introduction to legal perspective and protection of constitutional rights	The course "Introduction to legal perspective and protection of constitutional rights" aims to investigate the structure of health systems and their impact on the protection of constitutional rights from a juridical-constitutional point of view. The methods of organization between the State, Regions, territorial autonomies and the role of private entities will be analyzed. Through this course the PhD students are called to discuss the relationships between institutional stakeholders and the third sector involved in delivering peripheral services of the health care but relevant to the human being.	ENG	10	√.
G. Savarese		Introduction to study design	The course "Introduction to study design" will provide the basic knowledge to the principal types of study design in health care sector. In particular, the aim of the course is to improve knowledge and skills related to different types of study design. During the course, PhD students will acquire the key features of: observational studies, registries, randomized controlled trials, systematic reviews, meta-analyses. Hence, at the end of the course PhD students will understand what needs to be implemented when choosing a specific study design.	ENG	10	√
C. Seghieri		Population health data to inform public health decision making 2	The course "Population health data to inform public health decision making II" This course intends to provide a review of the elements of methods and applications when applied to realistic problems and real data for health services research. This course will provide in dept on specific methodologies as well as it will have practical sessions. In fact, the course will put in practice the key concepts discussed in the preliminary course. Hence, PhD students will be called to discuss in class exercises and examples of studies conducted in the health care field.	ENG	15	√
L. Tavoschi		Population health data to inform public health decision making 1	The course "Population health data to inform public health decision making I" intends to provide an overview of the methods for data collection and types of health data useful to inform policy decisions in the area of public health. In particular, the course will provide the basic elements related to public health research with a special reference to the methodological issues of the study design. This course is propaedeutic to the second course on population health data to inform decision making. Hence, PhD students have to attend this course to acquire the preliminary knowledge needed for the advanced one.	ENG	15	√

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M. Vainieri	S. Nuti	Health care management	The course "Health care management" aims at providing PhD students with the fundamental components of health care management. In particular, the course will introduce students with the main features of the health care systems (the mission, the actors and their relationships), then it will introduce the main issues related to the barriers and facilitators of the innovation in health care. The course is arranged mixing lectures with project works and case studies. Lectures will include theoretical issues in health service research.	ENG	20	√
L. Valcarenghi		Introduction to data acquisition and monitoring techniques	The course "Introduction to data acquisition and monitoring techniques". The course is structured in two parts. The first part provides with an introduction to data collection and analysis techniques. It aims at providing the students with guidance and procedures to collect and analyse data. The second part of the course aims at providing the students with more detailed techniques. Available open source software will be introduced and utilised in practical experiments. Hence, at the end of the course PhD students will have the basic knowledge related to the data collection and its monitoring.	ENG	10	√
Altre attività didattiche (seminari, attività di laboratorio e di ricerca, formazione interdisciplinare, multidisciplinare e transdisciplinare)						
Lecturer	**Co-Lecturer (if any)**	**Title of the Course**	**Brief description**	**Language**	**Hours**	**Compulsory**
External Lecturer		Open Science and Research Data Management	The course covers all modern aspects of Open Science and provides the tools and standards required to embed Open Science in research workflows. After a brief overview of the foundations of key IP rights, data protection principles and non-personal data regimes, it focuses on the concept and application of Open Science in Horizon Europe, the ongoing reform of the research assessment system in the EU, meaning and practice of open access publishing and data FAIRification. Specific attention will be devoted to research data management, Data Management Plans, the use of existing Research Infrastructure (RI) to disseminate research data and other outputs, and the definition and implementation of the European Open Science Cloud (EOSC).	ENG	12	√