

1. Record Nr.	UNINA9910254318403321
Autore	de Winter Joost C.F
Titolo	Human Subject Research for Engineers : A Practical Guide // by Joost C. F. de Winter, Dimitra Dodou
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
ISBN	3-319-56964-3
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (IX, 105 p. 23 illus., 9 illus. in color.)
Collana	SpringerBriefs in Applied Sciences and Technology
Disciplina	620.82
Soggetti	Engineering design Automatic control Robotics Mechatronics Engineering ethics User interfaces (Computer systems) Statistics Biometry Engineering Design Control, Robotics, Mechatronics Engineering Ethics User Interfaces and Human Computer Interaction Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences Biometrics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	1 Scientific Method, Human Research Ethics, and Biosafety/Biosecurity -- 2 Experimental Design -- 3 Statistics -- 4 Publishing -- MATLAB Scripts.
Sommario/riassunto	This Brief introduces engineers to the main principles in ethics, research design, statistics, and publishing of human subject research. In recent years, engineering has become strongly connected to disciplines such as biology, medicine, and psychology. Often, engineers

(and engineering students) are expected to perform human subject research. Typical human subject research topics conducted by engineers include human-computer interaction (e.g., evaluating the usability of software), exoskeletons, virtual reality, teleoperation, modelling of human behaviour and decision making (often within the framework of 'big data' research), product evaluation, biometrics, behavioural tracking (e.g., of work and travel patterns, or mobile phone use), transport and planning (e.g., an analysis of flows or safety issues), etc. Thus, it can be said that knowledge on how to do human subject research is indispensable for a substantial portion of engineers.

Engineers are generally well trained in calculus and mechanics, but may lack the appropriate knowledge on how to do research with human participants. In order to do high-quality human subject research in an ethical manner, several guidelines have to be followed and pitfalls have to be avoided. This book discusses these guidelines and pitfalls. The aim is to prepare engineers and engineering students to carry out independent research in a responsible manner.
