Intended learning outcomes
School of Innovation Sciences

BSc Innovation Sciences –
Major Psychology & Technology

May 2016
BSc Innovation Sciences (Technische Innovatiewetenschappen)

The Bachelor Innovation Sciences can be completed either with a major in Sustainable Innovation or with a major in Psychology & Technology.

Intended learning outcomes major Psychology & Technology

Following the ACQA competence areas\(^1\), the intended learning outcomes of the BSc program are specified as follows in terms of knowledge and skills of the graduates:

1) Competent in scientific disciplines

   a. Knowledge of and insight into specific technological systems and their components in one of the following technology domains: Information and Communication Technologies, Robotics, and Built Environment.
   b. Knowledge of and insight into the core concepts, theoretical frameworks and methodologies of psychology and insights into their application to understand the relationships between technology and users.
   c. Knowledge of and basic skill in the relevant techniques of observation, data collection and analysis techniques, and an awareness of the scope and limitations of these methods.
   d. Knowledge of and skills in the basics of the engineering profession such as mathematics, statistics and programming.

2) Competent in doing research

   a. Ability to (re)formulate a research problem in terms of the core concepts and theories of psychology; in particular those pertaining to human-technology interactions.
   b. Ability to develop and execute a research plan (with supervision).
   c. Ability (with supervision) to contribute to the development of scientific knowledge in the area of the psychology of human-technology interactions.
   d. Ability (with supervision) to identify and analyze problems typical for human-technology interaction from a technological and psychological perspective.
   e. Ability to appraise (under supervision) relevant scientific evidence on its usefulness in addressing a given research problem.
   f. Understanding of the ethics of psychological / user research, and has both the ability and attitude to adhere to these rules.

3) Competent in designing

   a. Ability to reformulate an ill-structured design problem in terms of the core concepts and theories of psychology; in particular those pertaining to human-technology interactions.
   b. Ability to develop and execute (under supervision) a sound plan for formulating design requirements.
   c. Ability to integrate existing knowledge on technological requirements for human-technology interactions in the (re-)design of (requirements for) products or systems.
   d. Ability (with supervision) to merge knowledge, methods and concepts of the technological and psychological domains.
   e. Ability to make decisions with respect to design requirements where they pertain to the interaction between the user and the system or product, and to provide justifications for these decisions.

\(^1\) A.W.M. Meijers, C.W.A.M. van Overveld, and J.C. Perrenet, Criteria for Academic Bachelor’s and Master’s Curricula, 2005.
4) A scientific approach

a. Ability to document the result of psychological or user requirement research for future use within the organization.
b. Ability to use a systematic approach characterized by the consistent application of existing theories, concepts and models of psychology and technology.
c. Ability to look beyond the borders of a specific discipline, to be sensitive to the relative contributions of various disciplines.
d. Basic understanding of the practices and principles of science.

5) Basic intellectual skills

a. A reflective attitude, with an ability to critically reflect (with supervision) on own thinking, decision making, and professional behavior.
b. A critical mindset and the ability to ask constructive questions regarding the basic problems in the field.
c. Ability to read and write scientific texts and evaluate argumentations.
d. Ability to think in abstract terms, including the ability to use and modify formal models of basic phenomena and processes in the domain.

6) Competent in co-operating and communicating

a. Capability of reporting and communicating the results of one’s learning and decision making -- including one’s research outcomes --, both verbally and in writing, with academic peers, engineers in one’s domain, and users.
b. Awareness of differences in work practices between scientific disciplines
c. Ability to work in (multidisciplinary) teams of engineers and academic peers.
d. Ability to listen, read, talk and write in English.

7) Takes account of the temporal, technological and social context

a. Ability to reflect on the relation between the use of scientific knowledge and technology, the implicated social, normative and ethical issues, and the way in which knowledge and technology development is influenced by its social and historical context.
b. Understanding of the different roles of engineers and related professionals in society.