



Tabella 1 – Obiettivi delle attività formative previste dal percorso (approvata dal Consiglio di Dipartimento di Psicologia e Scienze Cognitive in data 27 febbraio 2019)

Corso di Laurea Magistrale Interdipartimentale in Human Computer Interaction: obiettivi delle attività formative previste per le coorti di studentesse e studenti iscritte/i all'a.a. 2019/2020 e successivi

| Nome insegnamento | Obiettivi formativi |
|--|---|
| Design experience | The course consists of two parts: 1) Cognitive ergonomics: the module aims at providing a theoretical base on the cognitive aspects of interaction design as well as the methods and techniques derived from cognitive models of interaction; 2) Participatory design: the module aims at providing a theoretical framework and empirical experience of Participatory Design, including planning a PD project, running it, communicating the results. |
| Social interaction | Building on the basic concepts of social cognition, the current course aims to provide a comprehensive overview of the emotions, attitudes and behaviors that products and their interfaces can elicit on the self, and how they can impact interpersonal and intergroup interactions in different cultures. |
| Mind-Brain interaction and cognitive constraints | The course will analyze the relationships between structure and function/mind and brain in the visual, attentional and motor system. In addition, closed-loop experimental paradigms (e.g. based on Brain-Computer interfaces) exploiting interactions among mental states and brain signals for communication and control will be presented. |
| Research methodology quantitative | The course covers some basic/intermediate statistical and computational analyses for conducting empirical quantitative research. The statistics introduced will serve to explore quantitative data and organize data for statistical analysis and modeling. The statistical procedures will be illustrated using the R statistical package. Topics in the course will include: experimental design, questionnaires and surveys (both paper and pencil format and online format), social network analysis, and inferential statistics including generalized linear mixed models. |
| Research methodology qualitative | The course intend to analyze the theoretical and methodological framework of the qualitative research and to teach how to use the main qualitative methods and tools. |
| Cognitive neuroscience and neurotechnology | The course analyzes how interactive technologies may benefit from careful consideration of cognitive and brain processes. Specific emphasis will be devoted to the the application of such knowledge to implement technological devices to help individuals suffering from psychological and neurological problems. |
| Multisensory interactive systems | This course introduces new paradigms of interaction beyond graphical users interfaces and in particular multisensory, physical and tangible interactions. In particular it aims at providing students with an understanding of concepts and techniques for designing usable and engaging interactive systems within this paradigms including the introduction of a tools for building prototypes. |
| Prototyping interactive systems | The course covers methodologies for designing and prototyping graphic user interfaces. Principles of design research and visual communication are presented in the context of interaction design, cognition and user behavior. |
| Tirocinio formativo | ---- |
| Prova finale | ---- |
| Insegnamenti a scelta vincolata (*): 6 CFU tra i seguenti insegnamenti: | |
| Design for social inclusion | The course will explore the interaction and institutional conditions for the design of physical, technological and organizational devices able to provide greater chances of inclusion of disadvantaged groups. |
| Educational technology | This course focuses on the theory and the practice of the design of Interactive applications for human use in real life contexts. The theme of the course may range from e-learning, to mobile computing, game design, or e-health. The objective of the course is to develop an awareness of the theoretical and practical assumptions a designer needs to make in order to develop useful, usable and engaging application for real life use. |
| Affective computing | This class explores computing that relates to, arises from, or deliberately influences emotion. The aim is to identify the important research issues, and to ascertain potentially fruitful future research directions in relation to the multimodal emotion analysis and to human-computer interaction. In particular, the course will introduce key concepts, discuss technical approaches, and open issues in the following areas: interaction of emotion with cognition and perception; |



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| | the role of emotion in human-computer interaction; the communication of human emotion via face, voice, physiology, and behavior; construction of computers that have skills of emotional intelligence; the development of computers that "have" emotion; and other areas of current research interest. |
| Insegnamenti a scelta vincolata (*): 6 CFU tra i seguenti insegnamenti: | |
| Visual design | The course covers principles of visual design that will allow for efficient organization and presentation of information using technological interfaces. Topics will include typography, information architecture, layout, color, and design principles with specific reference to mobile devices. |
| Design epistemology and ethics | Students will be provided with solid theoretic-philosophical tools to understand the role that emotions play in interpreting verbal and non-verbal messages (i.e. whether they are assessed positively or negatively and are considered to be plausible). Students will acquire theoretical knowledge about the role emotions play in persuasive communication, in moral judgments, in situations that can potentially trigger empathic processes and, more generally, in the assessment of/reactions to various kinds of messages. At the end of the course, students will be able to recognize various kinds of persuasive messages; to identify what principles underpin various persuasive strategies and how these are based on moral judgments, emphatic mechanisms and other kinds of emotional reactions; what emotions are involved and how these can influence our understanding of the message. |
| Assistive technology for Neurological Disorders | The course will give an overview of the assisted and automated technologies developed for Neurological disorders and their application into neurorehabilitation (i.e electrotherapy devices, apparatus for transcranial magnetic stimulation, the robotic lower limb orthoses, robot for upper limb training, systems for functional electrical stimulation, neuroprosthesis and brain computer interfaces). |

(*) annualmente verrà valutata l'opportunità di attivare tutti o alcuni degli insegnamenti indicati



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Tabella 2 – Articolazione del Corso di Laurea Magistrale Interdipartimentale in Human Computer Interaction per le coorti di studentesse e studenti iscritte/i all'a.a. 2019/2020 e successivi (approvata dal Consiglio di Dipartimento di Psicologia e Scienze Cognitive in data 27 febbraio 2019)

I ANNO DI CORSO

Insegnamenti obbligatori

| Nome insegnamento | CFU | SSD | Tipo attività formativa | Propedeuticità |
|--|-----|------------|-------------------------|----------------|
| Design experience | 12 | ING-INF/05 | caratterizzante | --- |
| Social interaction | 6 | M-PSI/05 | caratterizzante | --- |
| Mind-Brain interaction and cognitive constraints | 6 | ING-INF/06 | caratterizzante | --- |
| Research methodology – quantitative | 6 | M-PSI/03 | caratterizzante | --- |
| Research methodology – qualitative | 6 | SPS/07 | caratterizzante | --- |
| Cognitive Neuroscience and Neurotechnology | 6 | M-PSI/02 | caratterizzante | --- |

II ANNO DI CORSO

Insegnamenti obbligatori

| Nome insegnamento | CFU | SSD | Tipo attività formativa | Propedeuticità |
|----------------------------------|-----|------------|-------------------------|----------------|
| Multisensory interactive systems | 6 | ING-INF/05 | caratterizzante | --- |
| Prototyping interactive systems | 6 | INF/01 | caratterizzante | --- |
| Tirocinio formativo | 18 | | Altre attività | --- |
| Prova finale | 18 | | Altre attività | --- |

I e II ANNO DI CORSO

Insegnamenti a scelta vincolata: 6 CFU tra i seguenti insegnamenti:

| Nome insegnamento | CFU | SSD | Tipo attività formativa | Propedeuticità |
|-----------------------------|-----|------------|-------------------------|----------------|
| Design for Social inclusion | 6 | SPS/07 | caratterizzante | --- |
| Educational technology | 6 | INF/01 | caratterizzante | --- |
| Affective computing | 6 | INF-INF/05 | caratterizzante | --- |

Insegnamenti a scelta vincolata: 12 CFU tra i seguenti insegnamenti:

| Nome insegnamento | CFU | SSD | Tipo attività formativa | Propedeuticità |
|---|-----|----------|-------------------------|----------------|
| Visual design | 6 | ICAR/17 | affine integrativa | --- |
| Design epistemology and ethics | 6 | M-FIL/04 | affine integrativa | --- |
| Assistive technology for Neurological Disorders | 6 | MED/37 | Affine integrativa | --- |

INSEGNAMENTI A SCELTA LIBERA - 12 cfu

Il percorso formativo prevede l'acquisizione di 12 CFU senza vincoli di settore scientifico disciplinare scelti tra gli insegnamenti che vengono appositamente attivati dal corso di laurea e annualmente pubblicati nel manifesto degli studi o tra quelli attivati dall'Ateneo.