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General Information	
Academic subject	Interaction Design – Academic Year 2019-2020
Degree course	Computer Science (second-level degree in Computer Science)
Curriculum	
ECTS credits	9
Compulsory attendance	No
Language	English

Subject teacher	Name Surname	Mail address	SSD
	Maria Francesca Costabile	maria.costabile@uniba.it	INF/01

Office Hours	Location	Day and time
	Room 519	Thursday 10.30am - 12.30pm

ECTS credits details			
Basic teaching activities	Lectures (6 credits) Practice session (2 credits) Student small projects or case studies (1 credit)		

Class schedule	
Period	Second semester
Year	First year
Type of class	Lectures, practice session

Time management	
Hours	78
Hours of lectures	48
Hours of practice session	30

Academic calendar	
Class begins	February 26 th , 2020
Class ends	May 29 th , 2020

Syllabus	
Prerequisites/requirements	There are not mandatory requirements, but it is better if students know about basic elements of Human-Computer Interaction (HCI)
Expected learning outcomes (according to Dublin Descriptors) (it is recommended that they are congruent with the learning outcomes contained in the Didactic Regulation and Prospectus a.a. 2017-2018)	<p><i>Knowledge and understanding</i></p> <p>The course is about the interaction design, with a specific focus on the software qualities from the users' perspectives. The course's learning outcomes are:</p> <ol style="list-style-type: none"> 1) students will deepen principles, methodologies and techniques for the design of high quality interactive systems, previously studied in the basic course of HCI of the "Laurea Triennale" and will learn more about advanced interaction technology; 2) students will learn and become able to apply techniques and metrics to evaluate the user experience; 3) students will learn about End-User Development (EUD) issues and how to design interactive systems that support end users to tailor and evolve the systems they use.

Students acquire this knowledge through teacher's lectures and possibly specific seminars, as well as discussions and exercises through which they practice what they have learned. In this way, they also gain awareness of their understanding and learning skills and on how these skills can be improved.

Applying knowledge and understanding

In order to enable students to apply the acquired knowledge, they perform both individual and collaborative exercises. In addition, students are required to develop, mostly by collaborating in group, small projects and/or case studies in which they apply some of techniques presented in class, having selected the most appropriate ones for the specific case. These projects/case studies contribute to the final assessment of the student and thus to the final grade the student gets for the course.

Making judgements

An important objective of the course is that the student achieves the ability to integrate knowledge, handle complexity and make decisions during the design, development and evaluation of the system software modules related to the interaction with users.

Exercises, projects and case studies performed during the course, which are discussed by teacher and students, are a means to train students to make judgements. This ability is evaluated by the teacher and contributes to the final grade, which also takes into account the active participation of the student to the discussions in class and the presentation of projects/case studies.

Communication

Students are encouraged to work in groups and are often invited to illustrate the outcome of exercises carried out individually or in groups, with the goal of developing their communication and collaboration skills. Students are also required to develop small projects/case studies in which they apply some of the learned techniques, selecting those ones that they feel most appropriate (based on their ability to make judgments). Projects/case studies are presented in class or at the oral examination; this allows the student to demonstrate his/her communicative abilities by illustrating the performed work, possibly using some slides previously prepared.

Learning skills

In order to stimulate their own learning skills, students are solicited to deepen some topics not discussed in detail by the teacher, using the recommended books and/or other sources. Student might present in class these topics and might also discuss them during the final examination.

Students are also invited to attend seminars held by other lecturers, internal to the department or visiting researchers, and they might be asked to discuss later in class the content of such seminars.

Contents	
Course program (preliminary)	<p>Introduction: Objective of the course, basic elements of HCI (brief recall from previous courses), usability and user experience, User-Centred Design; Norman's interaction model.</p> <p>Interaction design: What interaction design is and how it relates to HCI and other fields, design principles, requirement analysis, prototyping, interaction and co-evolution model.</p> <p>User Studies: Methods for gathering, analysis and presentation of user data, qualitative analysis, quantitative analysis.</p> <p>Statistical methods for HCI: descriptive statistics, inferential statistics, dependent and independent variable, measuring and controlling variables, parametric test (t-test, ANOVA), nonparametric test (χ^2, test di Wilcoxon-Mann-Whitney), use of software tools for data analysis.</p> <p>Software qualities from the users' point of view. Software qualities in the ISO 25000. Metrics for usability and user experience. Evaluation techniques: user test, controlled experiment, field study, analytical evaluation.</p> <p>Advanced interfaces: interaction with mobile systems, ubiquitous systems, large multitouch screens, virtual agents, anthropomorphism, emotional interaction, virtual reality, augmented reality.</p> <p>Personalization of user interfaces: adaptability and adaptivity</p> <p>End-User Development (EUD): definitions, culture of participation, the long tail model, meta-design, methodologies for creating EUD systems (SSW, SER),</p> <p>Information Visualization and Visual Analytics: definitions, strategies, techniques, example of systems.</p> <p>Interaction with intelligent systems: some issues.</p> <p>Practice session Exercise and discussions on: Design and evaluation of prototypes and/or interactive systems, user studies; Application of statistical methods for HCI; Interaction with intelligent systems.</p>
Bibliography	<ol style="list-style-type: none"> 1. Preece, J., Rogers, Y., Sharp, H. "Interaction Design, beyond human-computer interaction", John Wiley & Sons, 4th Edition, 2015. 2. Tullis, T., Albert, B. Measuring the user experience, collecting analyzing, and presenting usability metrics, Morgan Kaufmann Publisher, 2nd Edition, 2013.

	<p>3. Shneiderman, B. Plaisant, C. Designing the user interface, strategies for effective human-computer interaction, Pearson Higher Education, 5th Edition, 2010.</p> <p>4. Lazar, J., Feng J.K., Hocheiser, H. Research methods in Human-Computer Interaction, 2005, Morgan Kaufmann Publisher, 2nd Edition, 2017.</p> <p>5. Scientific articles indicated by the teacher.</p>
Notes	<p>Book n. 1 is the textbook; topics of all chapters are discussed in class.</p> <p>Book n. 2: the student has to read chapters 4, 5, and 6. They are also encouraged to look at the first three chapters</p> <p>Book n. 3: the student has to read chapter 14.</p> <p>Book n. 4: some chapters to look at will be indicated in class.</p>
Teaching methods	<p>Lectures in class with the support of slides prepared by the teacher.</p> <p>Practice session.</p> <p>Workshop-style sections to deepen with students the topics presented in class and to discuss projects and/or case studies presented by students.</p>
Assessment methods (indicate at least the type written, oral, other)	<p>The main assessment method is the final examination that includes: 1) a written test asking the student to answer both closed and open questions about the course program; 2) an oral exam where the written test is discussed.</p> <p>A partial examination takes place in the middle of the course; it is similar to the written test of the final examination and it is composed of open and/or closed questions on the program already completed. Only students who attend about 90% of the classes can take advantage of this partial examination, in order to stimulate them to attend classes.</p> <p>For the students attending classes, projects/case studies are carried out during the class semester. Students who do not attend the classes must meet the teacher at the beginning of the semester to define their projects/case study.</p>
Evaluation criteria (Explain for each expected learning outcome what a student has to know, or is able to do, and how many levels of achievement there are).	<p>In order to assess the knowledge acquired by student, and also the acquired abilities to make judgments and to communicate as well as their learning skills, the written test (individual) is evaluated on the basis of the correctness of the answers provided by the student and, considering the open answers, his/her ability to synthesise, the clarity of the presentation, the examples provided to better illustrate the written text, the ability to make comparisons and provide their own critical views.</p> <p>Projects and/or case studies will be evaluated by taking into account how they has been thoroughly carried out, the appropriateness of the techniques used, the originality of the solutions, the clarity and the synthesis capabilities that result from the produced documentation (written report and/or slide presentation).</p> <p>The written test scores approximately 80% of the overall examination rating, while project/case studies about 15% and the remaining 5% takes into account the student's active and autonomous participation in classroom discussions, exercises and other activities performed during the course.</p>

Further information	In order to participate to the final exam, students must make reservation at least 7 days before the date of the written exam and of the oral exam, by using the ESSE3 system. Without reservation in ESSE3, students cannot participate to the exam.
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