

Basic Information on the Course

Course Title	Social Computing	
Degree	Computer Science	
Academic Year	2023/24	
European Credit Transfer and Accumulation System (ECTS) / Crediti formativi universitari (CFU)	6 CFU	
SSD	INF/01	
Language	English	
Year	Second	
Semester	1 st [fall]	
Attendance	Highly recommended	
Degree website	https://www.uniba.it/it/ricerca/dipartimenti/informatica/didattica/corsi-di-laurea/computer-science/computer-science	

Instructors

Name and surname	Fabio Calefato
Email address	fabio.calefato@uniba.it
Telephone number	080 544 3261
Office	Dipartimento di Informatica, Via Orabona 4, 70125, Bari. Stanza n.665, 6° piano.
E-learning platform	https://elearning.uniba.it
Instructor's website	https://www.uniba.it/it/docenti/calefato-fabio
Office hours	Friday, 9:00 - 10:30, by appointment to be arranged in advance. <i>Day/time modified in case of overlap with classes schedule, institutional meetings, etc. (notified on the website)</i>

Syllabus

<p>Educational goals</p>	<p>The course regards Social Computing in a broad sense. As such, the main educational goals are as follows:</p> <p>Advanced Understanding and Technical Skills:</p> <ul style="list-style-type: none"> • Gain deep knowledge in social computing theories and applications, coupled with advanced technical proficiency in programming, data analysis, and machine learning. <p>Interdisciplinary Integration:</p> <ul style="list-style-type: none"> • Develop a strong technical foundation for addressing social computing challenges and integrate insights from diverse fields like computer science, psychology, and sociology. <p>Effective Communication and Collaboration:</p> <ul style="list-style-type: none"> • Refine communication skills to convey complex ideas to diverse audiences and foster collaboration within interdisciplinary teams. <p>Innovation and Adaptability:</p> <ul style="list-style-type: none"> • Cultivate an active mindset, demonstrating leadership, project management, and adaptability to emerging technologies in the dynamic landscape of social computing.
<p>Prerequisites</p>	<p>Prerequisite are defined in line with the didactic regulations of the degree course, which is available on the Computer Science degree course website.</p>
<p>Course Content (Programme)</p>	<p>Lectures</p> <p>(Part 1) Social computing: fundamentals</p> <ul style="list-style-type: none"> Introduction to Social Computing Computer-Mediated Communication theories Social Network Analysis Sentiment analysis and emotion mining Personality detection <p>(Part 2) Social computing meets software engineering: collaborative software engineering</p> <ul style="list-style-type: none"> Knowledge crowdsourcing Creative communities Open-source software <p>Tutorials and Lab</p> <ul style="list-style-type: none"> Trello Python NetworkX Google Colab SentiStrength and Senti4SD IPIP, Personality Recognizer Open-source guides by GitHub

<p>Reference textbooks</p>	<p>Base:</p> <ul style="list-style-type: none"> • Sawyer, Melva (ed.). <i>Social Computing: Principles, Networks and Application</i>, States Academic Press, 2022. <p>Suggested readings (references available in the slides):</p> <ul style="list-style-type: none"> • K. Crowston. Introduction to ACM Transactions on Social Computing. <i>Trans. Soc. Comput.</i> 1, 1, Article 1e (February 2018), DOI: 10.1145/3181713 • P. Zaphiris, C.S. Ang, A. Laghos (2012). Online Communities. In A. Sears & J. Jacko (Eds.), <i>The Human-Computer Interaction Handbook</i>. Lawrence Erlbaum & Associates, 2006 • (available at https://www.scribd.com/document/140824708/Zaphiris-Ang-Laghos-2012-Online-Communities-The-Human-Computer-Interaction-Handbook) • R. Hanneman, M. Riddle. 2005. Introduction to social network methods. • (available at http://faculty.ucr.edu/~hanneman). • Albert-Laszlo Barabasi. 2016. <i>Network Science</i>. Cambridge University Press, • (available at http://networksciencebook.com/) • C. Potts, Sentiment Symposium Tutorial • (available at http://sentiment.christopherpotts.net/lingstruc.html) • M. Storey, A. Zagalsky, F. Filho L. Singer, D. German. 2016. How Social and Communication Channels Shape and Challenge a Participatory Culture in Software Development, <i>IEEE Trans. on Software Engineering</i>, DOI: 10.1109/TSE.2016.2584053 • F. Lanubile, C. Ebert, R. Prikladnicki, A. Vizcaino, "Collaboration Tools for Global Software Engineering", <i>IEEE Software</i>, ISSN: 0740-7459, vol. 27, 2010, pp.52-55 DOI: 10.1109/MS.2010.39 • Scott Chacon and Ben Straub. <i>Pro Git</i>. 2nd Edition (2014). Apress (available at https://git-scm.com/book/en/v2) • S. Chacon. <i>GitHub Flow</i> (available at http://scottchacon.com/2011/08/31/githubflow.html) • C. Brindescu et al. 2014. How do centralized and distributed version control systems impact software changes? <i>ICSE 2014</i>, DOI: 10.1145/2568225.2568322 (available at http://dig.cs.illinois.edu/papers/ICSE14_Caius.pdf) • <i>Manifesto for Agile Software Development</i> (available at https://agilemanifesto.org/) • K. Schwaber, J. Sutherland. <i>The Scrum Guide</i> (available at www.scrumalliance.org/learn-about-scrum/the-scrum-guide) • D. Smite, M. Kuhrmann and P. Keil (2014). Virtual Teams [Guest editors' introduction]. <i>IEEE Software</i>, 31(6), 41-46. DOI: 10.1109/MS.2014.149 • <i>Open-Source Guides</i> (available at https://opensource.guide/)
<p>Notes on the textbooks</p>	<p>Instructor's slides and further material / readings available at the course website on the e-learning platform.</p> <ul style="list-style-type: none"> • A slide deck for each main topic: it is advisable to consult the indications contained in each deck, and specifically the related bibliography for exact references to the texts • Relevant material that is not available in the library may be requested to the Instructor
<p>Activity Organization</p>	
<p>Hours</p>	

Total	Lectures	Practice sessions	Individual study + case study
62	32	30	110 + 25 hours
CFU/ETCS			
6	4	2	

Teaching Modes	
	Class lectures (slides decks and further material made available in advance), interactive lab sessions, paper presentations by students, writing and reading assignments.

Expected Learning Outcomes	
Knowledge and comprehension skills	The student will learn the fundamental concepts of social computing, the various tasks addressed by research in this field and the methodology at the state of the art. The student will also acquire the fundamental knowledge to make implementation choices regarding the development of resources for each of the major topics covered in the course.
Applied knowledge and comprehension skills	The students will develop applied knowledge and comprehension skills, enabling them to practically implement theoretical concepts in real-world scenarios. This includes the ability to analyze and solve complex social computing challenges, demonstrating a proficiency that goes beyond theoretical understanding to hands-on application.
Further skills	<p>Autonomy in judgment Through coursework and practical experiences, students develop the ability to critically evaluate diverse perspectives, social considerations, and technological options. This autonomy empowers them to navigate complex issues, apply innovative solutions, and contribute thoughtfully to the field, demonstrating a high level of independence in their professional judgment within the dynamic landscape of social computing.</p> <p>Communication The student will learn to communicate findings and underlying driving ideas, as well as personal opinions and conclusions, in a clear and unambiguous manner, both to disciplinary specialists and to other people with expertise in different fields.</p> <p>Autonomous Learning The student will develop learning skills that enable him / her to continue to study independently following own interests and inclinations.</p>

Evaluation	
Assessment of learning outcomes	<p>For students regularly attending the course, the final grade will be determined approximately as a weighted average (in proportion to the type of ECTS) of three assignments (i.e., reading assignment, writing assignment, lab. assignment) completed during the course.</p> <p>For all other students, the final grade will be determined by the quality of the oral interview and the assessment of a lab assignment (which is agreed by the instructor beforehand).</p>

<p>Evaluation Criteria</p>	<p>Knowledge and Comprehension Skills in Social Computing:</p> <ul style="list-style-type: none"> • Ability to accurately and clearly articulate various issues pertaining to social computing, including representation, reasoning, and machine learning within the context of social networks and computational social science. • Understanding of methodologies for analyzing the performance of implemented systems in social computing. <p>Applied Knowledge and Comprehension Skills in Social Computing:</p> <ul style="list-style-type: none"> • Application of theoretical knowledge to address practical challenges in social computing. • Proficiency in utilizing industry-specific programming environments for implementing solutions relevant to social computing. • Ability to design and execute statistical tests to analyze the performance of implemented solutions in the social computing domain and discuss their outcomes. <p>Autonomy in Judgment for Social Computing:</p> <ul style="list-style-type: none"> • Competence in integrating knowledge and autonomously selecting models and techniques suitable for addressing diverse problems within the social computing domain. • Evaluation of implemented models and techniques against alternative solutions, showcasing a high degree of independent judgment in the context of social computing. <p>Communication in the Context of Social Computing:</p> <ul style="list-style-type: none"> • Competence in learning and utilizing the terminology specific to social computing, facilitating effective communication with experts in discussions related to different models and experimental results in social computing. <p>Autonomous Learning in Social Computing:</p> <ul style="list-style-type: none"> • Competence in devising potential extensions of learned techniques within the field of social computing, anticipating their integration into the preparation for more specialized courses within the social computing domain.
<p>Criteria for assessing learning outcomes and final grading</p>	<p>Grading ([18, ..., 30]) determined by the skills and competencies demonstrated through the assignments (only for the students regularly attending the course) or the oral examination (for those not attending in presence).</p>

Further Information

It is suggested that students rely exclusively on the information / communications provided on the official websites of the Dipartimento di Informatica, or on social platforms only if they are established and managed exclusively by the faculty members responsible for the given courses:

- <https://www.uniba.it/it/ricerca/dipartimenti/informatica/didattica/corsi-di-laurea/corsi-di-laurea>
- <https://www.uniba.it/it/ricerca/dipartimenti/informatica>
- <https://elearning.uniba.it>

Course programs are available at:

- <https://elearning.uniba.it>

Information that all students should be aware of is contained in the Teaching Regulations and Study Manifestos available on the website:

- <https://www.uniba.it/it/ricerca/dipartimenti/informatica/didattica/corsi-di-laurea/corsi-di-laurea>

Students are advised to be wary of information and materials circulating on unofficial websites or social groups, as they often prove to be unreliable, inaccurate or incomplete. If in doubt, request a meeting with the instructor in accordance to the reception arrangements.

ADA site 2023/24: <https://elearning.uniba.it/course/view.php?id=2107>