UNIVERSITÀ DI PISA

MOBILE AND SOCIAL SENSING SYSTEMS

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Anno accademico	2020/21
CdS	COMPUTER ENGINEERING
Codice	885II
CFU	6

Moduli	Settore/i	Tipo	Ore	Docente/i
MOBILE AND SOCIAL SENSING SYSTEMS	ING-INF/05	LEZIONI	60	MARCO AVVENUTI ALESSIO VECCHIO

Learning outcomes

Knowledge
The student who successfully completes the course will have the ability to understand the properties and application areas of mobile and pervasive distributed systems; will be aware of the basic methodologies for designing mobile and pervasive systems; will be able to demonstrate a solid knowledge of the mainstream technologies for programming mobile and wireless sensing applications.

Assessment criteria of knowledge
- During the oral exam the student must be able to demonstrate his/her knowledge of the course material and be able to discuss the reading matter thoughtfully and with propriety of expression. - The student must demonstrate the ability to put into practice and to execute, with critical awareness, the activities illustrated or carried out under the guidance of the teacher during the course.
Methods:

- Final oral exam
- Project (1/2 people per project)

Skills
The student will be able to design and implement applications based on pervasive technologies, including mobile and wearable devices.

Assessment criteria of skills
The practical aspects concerning the design and implementation of pervasive applications will be assessed through a project.
The theoretical aspects underlying pervasive and mobile computing will be assessed through oral exam.

Behaviors
The student will be able to critically evaluate the most recent advancements in the area of pervasive and mobile computing.

Assessment criteria of behaviors
Students will be required to read a research article concerning pervasive and mobile computing. The paper will be assigned by teachers during class hours and will be presented by students during class hours.

Prerequisites
Fundamentals of distributed programming.

Teaching methods
Delivery: face to face
Learning activities:

- attending lectures
- participation in seminar
- individual study
- group work

- laboratory work

Attendance: Advised
Teaching methods:

- lectures
- seminars
- laboratory
- project work

Syllabus

Lectures will address architectural and operating system issues, middleware abstractions and mechanisms (distributed objects middleware), wireless sensor network programming (event-driven, in-network, power-aware). In laboratory sessions students will exercise with programming smartphones-based mobile applications (Android), their integration with back-end servers, and wireless and wearable sensor applications.

Bibliography

Material and recommended reading indicated by the teacher.

Assessment methods

Presentation of a research article (10 minutes).
Project presentation and discussion (20-30 minutes).
Oral exam (approximately 30 minutes).

Temporary instructions due to the COVID-19 pandemic:
the exam will be carried out using Microsoft Teams using this channel
https://teams.microsoft.com/l/channel/19%3a25446b457da94556a79e3c1339478e69%40thread.tacv2/Generale?groupId=ec743325-b124-4ab6-9ab0-4cb0d11b13b4&tenantId=c7456b31-a220-47f5-be52-473828670aa1

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