UNIVERSITÀ DI PAVIA

## Anno Accademico 2017/2018

| DESIGN OF SERVICE SYSTEMS | |
|---|---|
| **Anno immatricolazione** | 2017/2018 |
| **Anno offerta** | 2017/2018 |
| **Normativa** | DM270 |
| **SSD** | ING-INF/05 (SISTEMI DI ELABORAZIONE DELLE INFORMAZIONI) |
| **Dipartimento** | DIPARTIMENTO DI INGEGNERIA INDUSTRIALE E DELL'INFORMAZIONE |
| **Corso di studio** | COMPUTER ENGINEERING |
| **Curriculum** | Embedded and Control Systems |
| **Anno di corso** | 1° |
| **Periodo didattico** | Primo Semestre (02/10/2017 - 19/01/2018) |
| **Crediti** | 6 |
| **Ore** | 56 ore di attività frontale |
| **Lingua insegnamento** | This course is the second module of the course 507315 - DESIGN OF BUSINESS SERVICE SYSTEMS. It addresses the design of Service Systems (SS) and follows up the course on Business Processes. SSs, based on Services Computing concept, rely on Big Data technologies and are typically deployed through mobile devices. SSs sit on the top of Internet and orchestrate diverse information (images, text, numerical data). SS can enable augmented services, also called “big services “, where a digital service augments a physical service. Uber is a good example of big service, where a physical service (the taxi ride) is enabled by a mobile App, which in turn cooperates with a taxi monitoring system, map services etc. A first key point is, then, the overall architecture of a SS, by identifying the service stakeholders, the related value propositions, and the elementary services to be orchestrated. A second point is the management of internet data, which come from sensors (IOT based systems) or social networks (crowd-sourced systems). Hence, SSs should check if such information is relevant and reliable, by a set of techniques that stem from deep learning and alike sciences. |
| **Tipo esame** | SCRITTO E ORALE CONGIUNTI |

**Docente**

MOTTA GIANMARIO PIERO ANTONIO (titolare) - 4 CFU
LONGO ANTONELLA - 2 CFU

## Prerequisiti

The course focuses on requirements analysis and on the SS architecture. Hence, an overall knowledge of business modeling/analysis techniques as UML, BPMN, ER (Entity Relationship) is highly recommended. Also, a general knowledge on Software Engineering is required.

## Obiettivi formativi

At the end of the course students shall:
(a) Know the overall business architecture of Service Systems
(b) Be able to model SS user requirements
(c) Be able to implement a simple prototype

## Programma e contenuti

1. Foundations on Services Systems (SS) The layered architecture of SS- Information sources: feeds, sensor data, public data, database, geographic data. The SS design roadmap
2. Services for personal mobility and indoor and outdoor navigation. Design of traveler support systems.
3. Crowd sourced and recommendation systems. City feed case study.
4. The issue of trustworthy information. Foundations of data science. Social Networks and data analysis

## Metodi didattici

Most topics will be taught through a complete learning cycle that will be based on the sequence

• Lecture on foundations (stimulus) which is aimed at explaining “What it is”

• Case study / Exercise (reinforcement) which is aimed at showing “How it is made”

• Project work made by student teams which intends to let students learn “How to make it”

## Testi di riferimento

- Journal articles
- Case studies

**Modalità verifica apprendimento**

Evaluation will be based on

- 1/3 the project work – the mark is given to the student team
- 1/3 the individual presentation of the team project
- 1/3 the individual oral or written exam on foundations

## Altre informazioni

| | |
|---|---|
| **Obiettivi Agenda 2030 per lo sviluppo sostenibile** | $lbl_legenda_sviluppo_sostenibile |