## Engineering of Mobile Systems

<table>
<thead>
<tr>
<th>COURSE TITLE</th>
<th>Engineering of Mobile Systems</th>
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<tr>
<td>COURSE CODE</td>
<td>76228</td>
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<tr>
<td>SCIENTIFIC SECTOR</td>
<td>INF/01</td>
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<tr>
<td>DEGREE</td>
<td>Bachelor in Computer Science</td>
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<tr>
<td>SEMESTER</td>
<td>2nd</td>
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<td>YEAR</td>
<td>3rd</td>
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<tr>
<td>CREDITS</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL LECTURING HOURS</td>
<td>40</td>
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<tr>
<td>TOTAL LAB HOURS</td>
<td>20</td>
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**Attendance**

Attendance is not compulsory, but is highly recommended, as practical exercises will be done during labs and lectures.

**PREREQUISITES**

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**COURSE PAGE**

https://ole.unibz.it/

### Specific Educational Objectives

- Type of course: caratterizzanti
- Scientific area: discipline informatiche

Students will learn the key concepts of mobile application development and the internet of things. Practical experience will be gained by using state of the art technologies for the development of mobile applications. Upon completion of the course, students shall have acquired expertise in writing mobile applications that leverage advanced mobile APIs and connect to outside web services, and shall be aware of the various tradeoffs in the development of mobile applications.

**LECTURER**

Romain Robbes

**SCIENTIFIC SECTOR OF THE LECTURER**

INF/01

**TEACHING LANGUAGE**

English
Office Hours
By previous email appointment: rrobbes@unibz.it
Office POS 1.16, first floor, Faculty of Computer Science, I, 39 0471 016025

Teaching assistant
Same as lecturer

Office Hours

List of topics covered
- Functional and declarative programming
- Design of mobile applications
- Frameworks and platforms for mobile development
- Data and resource management in a mobile context
- Interacting with Web Services
- Mobile device sensors

Teaching format
Frontal lectures, in-class exercises, projects in the lab.

Learning outcomes

Knowledge and understanding:
- To have a thorough knowledge of the main fundamentals, techniques and methods of software design, development and maintenance
- Possessing knowledge and methodologies of software design and development in a mobile environment

Applying knowledge and understanding:
- To be able to apply one's knowledge to the analysis, design, development and verification of hardware and software systems that meet predefined requirements
- Knowing how to develop applications in Web environment and mobile systems
- Knowing how to choose and use innovative technologies and methods appropriate to the context and the application problem

Making judgments
- To be able to work autonomously according to one's level of knowledge and understanding, also assuming responsibility for IT development or consultancy projects

Communication skills
- Ability to use the most modern communication tools even at a distance
- Ability to structure and draft technical documentation

Learning skills
- Ability to follow the rapid technological evolution and to learn the innovative aspects of the latest generation of technologies and information systems.
### ASSESSMENT

The assessment of the course consists of two parts:
- Written exam (50%);
- Project and assignments (50%)

### ASSESSMENT LANGUAGE

English

### EVALUATION CRITERIA AND CRITERIA FOR AWARDING MARKS

The students will implement a mobile application as a project. The application should include the topics covered during the lectures and labs. The output of the project are:

- a written report describing the application (problem statement, proposed solution, application design and architecture, functionality, development problems/solutions)
- a working demo of the application
- a project presentation

The goal of the project is to assess to which degree students have achieved the following learning outcomes: applying knowledge and understanding, making judgments, communication skills and ability to learn.

The aim of the written exam is to assess to which degree students have achieved the learning outcomes concerning applying knowledge and understanding, making judgments, communication skills and ability to learn.

### REQUIRED READINGS

Reading material will be provided on the course web page

### SUPPLEMENTARY READINGS

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### SOFTWARE USED

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