# Course Description – Academic Year 2017/2018

<table>
<thead>
<tr>
<th>Course title</th>
<th>Advanced Internet Technologies</th>
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<tbody>
<tr>
<td>Course code</td>
<td>72008</td>
</tr>
<tr>
<td>Scientific sector</td>
<td>INF/01</td>
</tr>
<tr>
<td>Degree</td>
<td>Master in Computer Science (LM-18)</td>
</tr>
<tr>
<td>Semester</td>
<td>2</td>
</tr>
<tr>
<td>Year</td>
<td>1</td>
</tr>
<tr>
<td>Credits</td>
<td>8</td>
</tr>
<tr>
<td>Modular</td>
<td>No</td>
</tr>
<tr>
<td>Total lecturing hours</td>
<td>48</td>
</tr>
<tr>
<td>Total lab hours</td>
<td>24</td>
</tr>
<tr>
<td>Total exercise hours</td>
<td></td>
</tr>
<tr>
<td>Attendance</td>
<td>Not Required</td>
</tr>
<tr>
<td>Prerequisites</td>
<td>Basic understanding of common procedural and object-oriented programming languages for the Internet such as Java or JavaScript. Basic knowledge of the structure and the protocols used on the Internet.</td>
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<tr>
<td>Course page</td>
<td><a href="https://ole.unibz.it/">https://ole.unibz.it/</a></td>
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## Specific Educational Objectives

The course belongs to the type "caratterizzanti – discipline informatiche" in the curriculum "Data and Knowledge Engineering" and in the curriculum "Software Engineering and IT Management".

The objective of this course is to provide a comprehensive knowledge regarding Internet Technologies, including Web, Applications, etc. The orientation of the course includes a significant study on design and development of web applications as well as mobile web applications.

## Lecturer

Guohui Xiao  
Piazza Domenicani 3, Room 2.05, xiao@inf.unibz.it, 0471-016266  

## Contact

ING-INF/05  

## Office Hours

Anytime, by previous appointment by email  

## Lecturing Assistant (if any)

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## Contact LA

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## Office Hours LA

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## List of Topics

- Web application design and development  
- J2EE  
- Ajax  
- Web services  
- Mobile application frameworks  
- Reliability and scalability  
- Security and privacy  
- Cloud computing  

## Teaching Format

Frontal classroom lecture plus lab sessions, exercises, and projects.

## Learning Outcomes

- Knowledge and understanding
- Know the most up-to-date development architectures for systems based on web and mobile technologies.
- Know the main methods and techniques for designing, creating, and maintaining software products and services.
- Applying knowledge and understanding
  - Be able to design and implement information systems in vertical sectors of applications according to technical, functional and organizational requirements.
  - Be able to design and execute experimental analyses on information systems or their components.
  - Be able to apply innovative methods for management and improvement of development processes in different application domains such web or mobile.
  - Be able to identify new needs and business opportunities in the field of software technology and services.
- Making judgments
  - Be able to identify reasonable work goals and estimate the resources required to achieve the objectives.
- Communication skills
  - Be able to structure and prepare scientific and technical documentation describing project activities.
- Ability to learn
  - Be able to independently keep up to date with developments in the most important areas of Computer Science.

### Assessment
- Project work to test knowledge application skills and communication skills, done in small groups who present their work orally
- Written exam with verification questions and questions to test knowledge application skills

### Assessment language
English

### Evaluation criteria and criteria for awarding marks
The final grade is the average of the written exam (50%) and the project assessment (50%). Both parts must be individually passed.

The project documentation needs to be submitted before the end of May and will be followed by a short presentation/discussion during the last week of the teaching period.

The project is valid for the 3 regular exam sessions of the academic year. It can be presented before the end the first exam session or during one of the following 2 regular exam sessions.

- Relevant points for written exam: clarity of answers, mastery of language ability to summarize, evaluate, and establish relationships between topics;
- Relevant for project assessment: ability to apply the concepts and technologies covered in the course, creativity, skills in critical thinking.

### Required readings
The course will be based on lecture notes.

### Supplementary readings
None.
| Software used | Java EE, Apache Server, Apache Tomcat, PostgreSQL, MySQL, J2EE JDK, PHP, Apache Cordova, PhoneGap, jQuery, Bootstrap (All Open Source, freely available in Internet). |