



| INTERNET IN MEDICINE |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| Enrollment year      | 2017/2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Academic year        | 2019/2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Regulations          | DM270                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Academic discipline  | ING-INF/05 (DATA PROCESSING SYSTEMS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Department           | DEPARTMENT OF ELECTRICAL, COMPUTER AND BIOMEDICAL ENGINEERING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Course               | BIOENGINEERING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Curriculum           | PERCORSO COMUNE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Year of study        | 3°                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Period               | 1st semester (30/09/2019 - 20/01/2020)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| ECTS                 | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Lesson hours         | 75 lesson hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Language             | Italian                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Activity type        | WRITTEN TEST                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Teacher              | LANZOLA GIORDANO (titolare) - 6 ECTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Prerequisites        | <p>The course requires a basic (but solid) knowledge relative to the fundamental concepts of computer programming (i.e. variables, statements, functions / methods and control structures) combined with the students' ability to code simple algorithms. Additional requirements concern knowledge of methodologies/technologies for the design of relational databases and the ability to write simple queries in SQL. All those prerequisites are acquired attending previous courses. The profile is completed by a basic knowledge on the use of the PC and Web browsing, as well as by the mix of design skills, logic ability, and critical acumen, that represent a prerequisite for every School of Engineering.</p> |
| Learning outcomes    | <p>The module helps the student in becoming familiar with the basic methodologies and technologies for creating 'dynamic' web applications that interact with databases through a browser. It is application oriented and stimulates the design capabilities of the student asking him to</p>                                                                                                                                                                                                                                                                                                                                                                                                                                 |

develop a team project as part of the class work. The module depends on the classes addressing fundamentals of programming and methodologies for designing databases. The course augments those skills illustrating the languages and tools ??for "web publishing" and exploiting them for coding the modules required to connect the pages of the application project to a relational database.

#### Course contents

The course, positioned at the last year of the Bachelor of Science, has a strongly experimental structuring.

##### Basic Internet Skills

Birth and growth of the Internet, its protocols: TCP/IP, WWW, etc...

##### Use of Hypertexts

Languages for representing hypertexts. Illustration of the HTML protocol and its most important elements that allow the definition of an hypertext. The composition of static web pages and the ways to access them. URLs, forms, and parameters passed across server requests.

##### Application Server

Difference between static and dynamic web pages and the importance of the latter. Preserving the state across multiple HTTP interactions with the server.

##### Developing dynamic pages in JSP

Fundamentals of JSP applications. Generating dynamic content in web pages. Use of scripting elements. Accessing databases with custom JSP actions.

##### Project Development

Students will be asked to develop a team project during the course. This activity encompasses the design and implementation of a small web application including different sections and restricted areas. Users with different roles should be able to connect to the application which will exhibit different behaviors according to the user's role. The application should support the exchange of data between users and a backend application.

#### Teaching methods

Lectures (hours/year in lecture theatre): 30

Practical class (hours/year in lecture theatre): 9

Practicals (hours/year in lecture theatre): 32

#### Reccomended or required readings

Chuck Musciano, Bill Kennedy. HTML & XHTML: The Definitive Guide (5th Edition). O'Reilly & Associates. ISBN: 0-596-00382-X (August 2002, 700 Pages). A basic textbook on HTML.

Hans Bergsten. JavaServer Pages, (3rd Edition). O'Reilly & Associates. ISBN: 0-596-00563-6 (December 2003, 764 pages). This textbook approaches different issues related to the implementation of dynamic web application using JSP as the enabling technology.

C. J. Date, Hugh Darwen. A Guide to SQL Standard, A (4th Edition). Addison-Wesley Professional. ISBN: 978-0201964264 (Novembre 1996,

544 pagine). The textbook illustrates the SQL standard language for interacting with databases.

Jason Brittain, Ian F. Darwin. Tomcat: The Definitive Guide. O'Reilly & Associates. ISBN: 0-596-00318-8 (Giugno 2003, 180 Pagine). A guide to installing and using Tomcat, the reference implementation of a Servlet and JSP container available in open-source.

#### Assessment methods

Students will team in groups with the aim of creating a simple Web application that complies with the format shown in the classroom during the semester. A review is scheduled after 6-8 weeks to verify the correctness of the specifications of that application. By the end of the course, students should complete the application in accordance to the specifications they provided during the review. The applications are evaluated, giving a starting grade for the final test. The final test requires making some changes to a project in order to better assess the level of profit and discriminate the contribution of the individuals to the working group. Students who did not take part to a project during the semester may get a grade through a verification test that is held in the classroom at scheduled exams.

#### Further information

Students will team in groups with the aim of creating a simple Web application that complies with the format shown in the classroom during the semester. A review is scheduled after 6-8 weeks to verify the correctness of the specifications of that application. By the end of the course, students should complete the application in accordance to the specifications they provided during the review. The applications are evaluated, giving a starting grade for the final test. The final test requires making some changes to a project in order to better assess the level of profit and discriminate the contribution of the individuals to the working group. Students who did not take part to a project during the semester may get a grade through a verification test that is held in the classroom at scheduled exams.

#### Sustainable development goals - Agenda 2030

[\\$lbl\\_legenda\\_sviluppo\\_sostenibile](#)