Internet Technologies Course

Name of the subject: **Internet Technologies - BSc**	SUBJECT code:	Weekly hours: 2 lectures + 2 practical work	Credit: 4
Subject leader: Darko Brodic	Academi Degree: Associate Professor	Prerequisites: Courses: Informatics I, Informatics II, Programming Languages and Programming	

Purpose: Within this course, students gain the necessary theoretical and practical knowledge the principles of designing and developing applications in the Internet environment. By studying models, architectures and techniques at the conceptual and practical level students are being trained for the independent development of web applications.

Outcome: Students acquire knowledge and skills for designing and implementing information systems in the Internet environment. Students should master basic techniques, methods and concepts for developing web applications.

Course description: Internet as an infrastructure for the transmission and delivery of information. Removing anomalies in the application layer of the TCP / IP model by introducing Internet technologies for layers, sessions and presentations. Develop applications in the Internet environment. Application of the HTTP protocol for the transport layer emulation. XML technology for storing, processing and visualizing the presentation layer data. JSON. Internet technology for securing distribution, scalability and reliability in the application of e-business. Service-oriented architecture. Principles of design and development of electronic distribution systems based on service-oriented architecture. Comparative overview of technologies for the development of information systems in the Internet environment. Microsoft NET technology, JAVA technology, PHP, XML.

Practical work:
Designing elements of the user interface HTNL5. JavaScript and jquery technology. Storage and data transfer in the web environment. XML technology. JSON technology. JQGrid. AJAX. Implementation of business logic. Web application development. PHP. Object-oriented PHP. Implementation of the MySQL data layer. PHP application development with MVC architecture. Service-oriented architecture. Web services. Visualization on the web.

Schedule	
Weeks	**Topics**
1.	Internet as an infrastructure for the transmission and delivery of information
2.	Removing anomalies in the application layer of the TCP / IP model by introducing Internet technologies for layers, sessions and presentations
3.	Develop applications in the Internet environment. Application of HTTP protocol for emulation of the transport layer

4.	XML technology for storing, processing and visualizing the presentation layer data
5.	JSON technology; JQGrid. AJAX
6.	Internet technology for securing distribution, scalability and reliability in the application of electronic business.
7.	Service-oriented architecture
8.	Principles of design and development of electronic distribution systems
9.	Comparative overview of technologies for the development
10.	Microsoft NET technology
11.	JAVA technology
12.	PHP and object-oriented PHP
13.	Implementation of the MySQL data layer
14.	PHP application development with MVC architecture

Final grade: 20pt – Class attendance: 10pt lectures and 10pt exercises attendance; 20pt – Colloquium; 40pt – Final exam: 30pt written and 30pt oral exam.
0-50 – Mark 5
51-60 – Mark 6
61-70 – Mark 7
71-80 – Mark 8
81-90 – Mark 9
91-100 – Mark 10

Compulsory literature:
1. Internet and Contemporary Business, Monograph, M.Ivković, B.Radenković, Zrenjanin, 1998
2. D. Ince, Developing distributed and E- commerce Applications, Parson Education Limited, 2002
3. M. Vučković, Fundamental concepts of programming languages, lectures, FON, 2015
4. R.W. Sebesta, Concepts of programming languages, Ninth edition, Addison –Wesley Publishing Company, 2010

Supplemental literature*:*