



## SYLLABUS

| <b>Basic information of the course</b> |   |
|--|---|
| <b>University:</b>                     | <b>University “Ukshin Hoti” - Prizren</b>   |
| <b>Academic unit:</b>                  | <b>Faculty of Computer Science</b>  |
| <b>Study program:</b>                  | <b>Information Technologies and Telecommunication</b>   |
| <b>Course:</b>                         | <b>Fundamentals of Information Communication</b>  |
| <b>Study level:</b>                    | <b>Bachelor</b>   |
| <b>Course status:</b>                  | <b>Elective</b>   |
| <b>Study year:</b>                     | <b>1</b>  |
| <b>Number of hours per week:</b>       | <b>2+2</b>  |
| <b>Credit value - ECTS:</b>            | <b>6</b>  |
| <b>Time / location:</b>                | <b>It will be published in the university web site!</b>   |
| <b>Lecturers:</b>                      | <b>Ass. Arbër Beshiri, Ph. D. c.</b>  |
| <b>Contact details:</b>                | <b>arber.beshiri@uni-prizren.com</b>  |
|  |   |
| <b>Course description:</b>             | The course provides basic concepts about the steps for information transfer, information as a whole and signals, types of transmission, information transmission modulations, types of modulations, demodulations, types of networks and their application, optical networks and their standards, types of modulations optics, media for transmitting information, etc. |
| <b>Course objectives:</b>              | This course enables students to understand the steps needed to carry information from source to destination; the difference between information, message and data; various technologies of transmission media, information modulation and networking; optical networks and various technologies applied in these networks, etc.   |
| <b>Learning outcomes:</b>              | After completion of this course the student will be able to: <ul style="list-style-type: none"> <li>- Understand information transmission technologies.</li> <li>- Understand the types of networks and transmission media.</li> <li>- Understand and apply information modulation</li> </ul>   |

|  |   |                           |                    |
|--|---|---------------------------|--------------------|
|  | technologies and distinguish between information, data, message and the steps to be taken to transmit them through adequate information, network and data transmission devices.   |                           |                    |
| <b>Contribution on student load (must correspond with learning outcomes)</b>   |   |                           |                    |
| <b>Activity</b>  | <b>Hours</b>  | <b>Days/week</b>          | <b>Total/hours</b> |
| Lectures   | 2   | 15                        | 30                 |
| Exercise theoretical/laboratory  | 2   | 15                        | 30                 |
| Practice work  | 0   | 0                         | 0                  |
| Contact with lecturer/consultations  | 1   | 5                         | 5                  |
| Field exercises  | 1   | 1                         | 1                  |
| Midterms   | 2   | 2                         | 4                  |
| Laboratory exercises   | 2   | 2                         | 4                  |
| Individual time spent studying (at the library or home)  | 4   | 10                        | 30                 |
| Final preparation for the exam   | 5   | 6                         | 30                 |
| Time spent in evaluation (tests, quiz, final exam)   | 2   | 3                         | 6                  |
| Projects, presentations, etc.  | 0   | 0                         | 0                  |
| <b>Total</b>   |   |                           | <b>150</b>         |
| Notice: 1 ECTS credits = 25 hours commitment, e.g. if the course has 6 ECTS credits student must have 150 hours during the semester. |   |                           |                    |
| <b>Teaching methods:</b>   | The course is a combination of lectures, discussions, numerical and laboratory exercises, while the assignments are presented by the laboratory course lecturers!   |                           |                    |
| <b>Assessment methods:</b>   | <ul style="list-style-type: none"> <li>- Attendance in lectures and exercises: 5% + 5%</li> <li>- Laboratory assignments: 20%.</li> <li>- Midterm 1: 35%.</li> <li>- Midterm 2: 35%.</li> <li>- Or final exam: 100%.</li> </ul> |                           |                    |
| <b>Assessment and grading:</b>   | <b>Vlerësimi në %</b>   | <b>Nota përfundimtare</b> |                    |
|  | 91% - 100%  | 10                        |                    |
|  | 81% - 90%   | 9                         |                    |
|  | 71% - 80%   | 8                         |                    |
|  | 61% - 70%   | 7                         |                    |
|  | 51% - 60%   | 6                         |                    |
|  | 0% - 50%  | 5                         |                    |

| <b>Literature</b>             |   |
|-------------------------------|---|
| <b>Basic literature:</b>      | <ol style="list-style-type: none"> <li>1. Behrouz A. Forouzan. Data Communications and Networking with TCP/IP Protocol Suite, 6<sup>th</sup> Edition, McGraw-Hill, 2021.</li> <li>2. Behrouz A. Forouzan. Data Communications and Networking, 5<sup>th</sup> Edition, McGraw-Hill, 2013.</li> </ol> |
| <b>Additional literature:</b> | <ol style="list-style-type: none"> <li>1. Curt M. White. Data Communications and Computer Networks - A Business User's Approach, 8<sup>th</sup> Edition, Cengage Learning, 2016.</li> </ol>   |
| <b>Study plan</b>             |   |
| <b>Week</b>                   | <b>Lectures</b>   |
| <i>First week:</i>            | <ul style="list-style-type: none"> <li>• Introduction to course organization - syllabus (about lectures).</li> <li>• Introduction to information communication.</li> </ul>  |
| <i>Second week:</i>           | <ul style="list-style-type: none"> <li>• Models of computer networks.</li> </ul>  |
| <i>Third week:</i>            | <ul style="list-style-type: none"> <li>• The physical layer of computer networks.</li> </ul>  |
| <i>Fourth week:</i>           | <ul style="list-style-type: none"> <li>• Analog transmission.</li> </ul>  |
| <i>Fifth week:</i>            | <ul style="list-style-type: none"> <li>• Digital transmission.</li> </ul>   |
| <i>Sixth week:</i>            | <ul style="list-style-type: none"> <li>• Bandwidth usage - multiplexing and signal distribution spectrum.</li> </ul>  |
| <i>Seventh week:</i>          | <ul style="list-style-type: none"> <li>• Transmission media.</li> </ul>   |
| <i>Eighth week:</i>           | <ul style="list-style-type: none"> <li>• First midterm.</li> </ul>  |
| <i>Ninth week:</i>            | <ul style="list-style-type: none"> <li>• Methods for information transmission - Switching.</li> </ul>   |
| <i>Tenth week:</i>            | <ul style="list-style-type: none"> <li>• LANs – Ethernet.</li> <li>• Types of cable networks.</li> </ul>  |
| <i>Eleventh week:</i>         | <ul style="list-style-type: none"> <li>• Connection (communication) devices and virtual LAN.</li> <li>• Network layer.</li> </ul>   |
| <i>Twelfth week:</i>          | <ul style="list-style-type: none"> <li>• Network layer protocols.</li> <li>• Unicasting and multicasting routing.</li> </ul>  |
| <i>Thirteenth week:</i>       | <ul style="list-style-type: none"> <li>• Transport layer.</li> <li>• Transport layer protocols.</li> </ul>  |
| <i>Fourteenth week:</i>       | <ul style="list-style-type: none"> <li>• Client-server protocols.</li> <li>• Peer-to-peer paradigm.</li> </ul>  |
| <i>Fifteenth week:</i>        | <ul style="list-style-type: none"> <li>• Second (final) midterm.</li> </ul>   |

## Exercises

| Study plan              |   |
|-------------------------|---|
| Java                    | Exercises   |
| <i>First week:</i>      | <ul style="list-style-type: none"> <li>• Introduction to course organization – syllabus (about exercises).</li> <li>• Introduction to information communication.</li> </ul> |
| <i>Second week:</i>     | <ul style="list-style-type: none"> <li>• Models of computer networks.</li> </ul>  |
| <i>Third week:</i>      | <ul style="list-style-type: none"> <li>• The physical layer of computer networks.</li> </ul>  |
| <i>Fourth week:</i>     | <ul style="list-style-type: none"> <li>• Analog transmission.</li> </ul>  |
| <i>Fifth week:</i>      | <ul style="list-style-type: none"> <li>• Digital transmission.</li> </ul>   |
| <i>Sixth week:</i>      | <ul style="list-style-type: none"> <li>• Bandwidth usage - multiplexing and signal distribution spectrum.</li> </ul>  |
| <i>Seventh week:</i>    | <ul style="list-style-type: none"> <li>• Transmission media.</li> </ul>   |
| <i>Eighth week:</i>     | <ul style="list-style-type: none"> <li>• Consultations about the first midterm.</li> </ul>  |
| <i>Ninth week:</i>      | <ul style="list-style-type: none"> <li>• Methods for information transmission - Switching.</li> </ul>   |
| <i>Tenth week:</i>      | <ul style="list-style-type: none"> <li>• LANs – Ethernet.</li> <li>• Types of cable networks.</li> </ul>  |
| <i>Eleventh week:</i>   | <ul style="list-style-type: none"> <li>• Connection (communication) devices and virtual LAN.</li> <li>• Network layer.</li> </ul>   |
| <i>Twelfth week:</i>    | <ul style="list-style-type: none"> <li>• Network layer protocols.</li> <li>• Unicasting and multicasting routing.</li> </ul>  |
| <i>Thirteenth week:</i> | <ul style="list-style-type: none"> <li>• Transport layer.</li> <li>• Transport layer protocols.</li> </ul>  |
| <i>Fourteenth week:</i> | <ul style="list-style-type: none"> <li>• Client-server protocols.</li> <li>• Peer-to-peer paradigm.</li> </ul>  |
| <i>Fifteenth week:</i>  | <ul style="list-style-type: none"> <li>• Consultations about the second (final) midterm.</li> </ul>   |

| Academic policies and rules of conduct  |
|---|
| <ul style="list-style-type: none"> <li>• Generally lecture presentations will be made through MS PowerPoint, tables, material usage, computer programs and numeric exercises.</li> <li>• Additional resources (scientific papers, publications, national bulletins, as well as recent discoveries and research) will be provided by professors.</li> <li>• In the absence of the opportunity for practical work to be organized weekly, in cooperation with the management of the university, this activity will be organized on certain days in: organizations, companies, etc.</li> <li>• During each session will be organized the conversation and co-participation with the students!</li> <li>• Students are required to be regular in lectures and exercises!</li> <li>• It will be evaluated when the students collaborate and participate in the lectures and course exercises!</li> <li>• Timely arrival in lectures and exercises is mandatory!</li> </ul> |

