**Vocational School / Computer Programming**

**2023 - 2024 Academic Year**

**NETWORK PROGRAMMING**

**Syllabus**

| **Course Description** | | | | | |
|---|---|---|---|---|---|
| **Name** | **Code** | **Semester** | **T+A Hour** | **Credit** | **ECTS** |
| NETWORK PROGRAMMING | BPR2260490 | Spring Semester | 1+2 | 2 | 5 |

| | |
|---|---|
| **Prerequisites Courses** | |
| **Recommended Elective Courses** | |
| **Language of Instruction** | Turkish |
| **Course Level** | Short Cycle (Associate's Degree) |
| **Course Type** | Elective |
| **Course Coordinator** | Lect. Beyza KOYULMUŞ |
| **Name of Lecturer(s)** | |
| **Assistant(s)** | |
| **Aim** | The aim of this course is to examine, design and develop applications that use the internet structure. |
| **Course Content** | This course contains; Course Introduction, Introduction to Computer Networks and OSI Model,TCP/IP Protocol Stack,Web Application Architecture,Socket Programming (TCP UDP Sockets),Socket Programming (TCP UDP Sockets),Web Programming (Session Management, Access Control), Scalable Web Architectures,NodeJS Platform, Web Application Development with NodeJS,Comet (Reverse Ajax), Web Sockets, NoSQL Databases,Web Services (RESTful),Security of Web Applications,Internet of Things and Applications,Software Defined Networks,Project,Project. |

| **Course Learning Outcomes** | **Teaching Methods** | **Assessment Methods** |
|---|---|---|
| Increases awareness of the security of Network and Web Applications. | 10, 13, 9 | A |
| Understands the TCP/IP protocol. | 10, 16, 9 | A, E |
| Develops applications that run on the network | 12, 2, 9 | A, E |
| Uses web services | 16, 2, 6, 8, 9 | A, E, F |
| Understands the Internet of Things. | 13, 18, 6, 9 | A, F |

| | |
|---|---|
| **Teaching Methods** | 10: Discussion Method, 12: Problem Solving Method, 13: Case Study Method, 16: Question - Answer Technique, 18: Micro Teaching Technique, 2: Project Based Learning Model, 6: Experiential Learning, 8: Flipped Classroom Learning, 9: Lecture Method |
| **Assessment Methods** | A: Traditional Written Exam, E: Homework, F: Project Task |

**Lecture Schedule**

| **Sequence** | **Topics** | **Preliminary Preparation** |
|---|---|---|
| 1 | Course Introduction, Introduction to Computer Networks and OSI Model | |
| 2 | TCP/IP Protocol Stack | |
| 3 | Web Application Architecture | |
| 4 | Socket Programming (TCP UDP Sockets) | |
| 5 | Socket Programming (TCP UDP Sockets) | |
| 6 | Web Programming (Session Management, Access Control), Scalable Web Architectures | |
| 7 | NodeJS Platform, Web Application Development with NodeJS | |
| 8 | Comet (Reverse Ajax), Web Sockets, NoSQL Databases | |
| 9 | Web Services (RESTful) | |
| 10 | Security of Web Applications | |
| 11 | Internet of Things and Applications | |
| 12 | Software Defined Networks | |
| 13 | Project | |
| 14 | Project | |

| **Evaluation Methods** | **Weight(%)** |
|---|---|
| Midterm Exam | 40 |
| General Exam | 60 |

**Resources**

Behrouz A. Forouzan, Firouz Mosharraf, Computer Networks: A Top Down Approach
William Stallings, Data and Computer Communications 9/E, Prentice Hall, 2007
E.R. Harold, Java Network Programming 4th Edition, 2014
Matt Zandstra, PHP Objects, Patterns, and Practice Third Edition, Apress, 2010
www.w3schools.com