

TOROS ÜNİVERSİTESİ

Faculty Of Engineering
Computer And Software Engineering

Course Information

| VIRTUALIZATION TECHNOLOGIES | | | | | |
|-----------------------------|----------|-------------|----------|-----------------|-------------|
| Code | Semester | Theoretical | Practice | National Credit | ECTS Credit |
| | | Hour / Week | | | |
| CSE334 | Spring | 3 | 0 | 3 | |

| | |
|---|--|
| Prerequisites and co-requisites | None |
| Language of instruction | English |
| Type | Elective |
| Level of Course | Bachelor's |
| Lecturer | |
| Mode of Delivery | Face to Face |
| Suggested Subject | None |
| Professional practise (internship) | None |
| Objectives of the Course | Describe the benefits of using virtual machines. Define a virtual machine. Identify the files that comprise a virtual machine. Explain the concepts of server, network, and storage virtualization. Compare and contrast physical and virtual architectures. Describe the history of computer virtualization technology. Discuss the practical aspects of virtualization. |
| Contents of the Course | The Virtualization Technologies course is designed to get students up to speed on one of the most important aspects of today's IT environment. This course covers the fundamental concepts, components, infrastructure, as well as security and privacy considerations for virtualization systems. Through lectures, discussions, demonstrations, and labs, students learn the skills and knowledge necessary to install, configure and manage virtual environments. Students will learn how to effectively plan, implement and manage Cloud Computing in virtual data centers and complete introductory coursework in Virtualization software. Topics will include creating virtualized switches and storage, creating and managing virtual machines, establishing access controls, and performing resource monitoring. |

Learning Outcomes of Course

| # | Learning Outcomes |
|---|---|
| 1 | Analysis and inquiry: Students will demonstrate an ability to analyze information from multiple sources and to raise pertinent questions regarding that information. |
| 2 | Critical and creative thinking: Students will develop the disposition and skills to strategize, gather, organize, create, refine, analyze, and evaluate the credibility of relevant information and ideas. |
| 3 | Teamwork and problem-solving: Students will demonstrate the ability to work together cohesively with diverse groups of persons, including working as a group to resolve any issues that arise. |
| 4 | Written and oral communication: Students will communicate effectively in a range of social, academic, Common Course Outline Monday, April 21, 2014 and professional contexts using a variety of means, including written, oral, numeric/quantitative, graphic, and visual modes of communication. |

Course Syllabus

| # | Subjects | Teaching Methods and Technics |
|---|---|-----------------------------------|
| 1 | Explore virtualization concepts. | Lecture, discussion, presentation |
| 2 | Differentiate between types of virtualization and the environments that support them. | Lecture, discussion, presentation |
| 3 | Analyze the uses of server and desktop based virtualization. | Lecture, discussion, presentation |
| 4 | Demonstrate the configuration processes of server virtualization. | Lecture, discussion, presentation |

| | | |
|----|---|-----------------------------------|
| 5 | Secure virtual infrastructure. | Lecture, discussion, presentation |
| 6 | Perform basic storage troubleshooting. | Lecture, discussion, presentation |
| 7 | Manage user access to the virtual infrastructure. | Lecture, discussion, presentation |
| 8 | Midterm Exam | Exam |
| 9 | Perform basic network troubleshooting. | Lecture, discussion, presentation |
| 10 | Configure and manage virtual networking. | Lecture, discussion, presentation |
| 11 | Monitor system resource usage and utilization. | Lecture, discussion, presentation |
| 12 | Investigate and implement the VMware Server platform. | Lecture, discussion, presentation |
| 13 | Explain and implement the Citrix XenServer platform. | Lecture, discussion, presentation |
| 14 | Investigate the features of the Hyper-V Platform. | Lecture, discussion, presentation |
| 15 | Overview | Lecture, discussion, presentation |
| 16 | Final Exam | Exam |

Course Syllabus

| # | Material / Resources | Information About Resources | Reference / Recommended Resources |
|---|---|-----------------------------|-----------------------------------|
| 1 | Practical Virtualization Solutions: Virtualization from the Trenches, Kenneth Hess & Amy Newman, Windows ve Sanallaştırma, Ortaç Demirel, Pusula yayıncılık | | |

Method of Assessment

| # | Weight | Work Type | Work Title |
|---|--------|---------------|---------------|
| 1 | 40% | Mid-Term Exam | Mid-Term Exam |
| 2 | 60% | Final Exam | Final Exam |

Relationship between Learning Outcomes of Course and Program Outcomes

| # | Learning Outcomes | Program Outcomes | Method of Assessment |
|---|---|------------------|----------------------|
| 1 | Analysis and inquiry: Students will demonstrate an ability to analyze information from multiple sources and to raise pertinent questions regarding that information. | 2,3,4 | 1,2 |
| 2 | Critical and creative thinking: Students will develop the disposition and skills to strategize, gather, organize, create, refine, analyze, and evaluate the credibility of relevant information and ideas. | 2,3,4 | 1,2 |
| 3 | Teamwork and problem-solving: Students will demonstrate the ability to work together cohesively with diverse groups of persons, including working as a group to resolve any issues that arise. | 2,3,4 | 1,2 |
| 4 | Written and oral communication: Students will communicate effectively in a range of social, academic, Common Course Outline Monday, April 21, 2014 and professional contexts using a variety of means, including written, oral, numeric/quantitative, graphic, and visual modes of communication. | 2,3,4 | 1,2 |

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

Work Load Details

| # | Type of Work | Quantity | Time (Hour) | Work Load |
|---|---|----------|-------------|-----------|
| 1 | Course Duration | 14 | 3 | 42 |
| 2 | Course Duration Except Class (Preliminary Study, Enhancement) | 14 | 3 | 42 |
| 3 | Presentation and Seminar Preparation | 0 | 0 | 0 |
| 4 | Web Research, Library and Archival Work | 0 | 0 | 0 |
| 5 | Document/Information Listing | 0 | 0 | 0 |

| | | | | |
|----|------------------------------|---|----|------------|
| 6 | Workshop | 0 | 0 | 0 |
| 7 | Preparation for Midterm Exam | 1 | 1 | 1 |
| 8 | Midterm Exam | 1 | 2 | 2 |
| 9 | Quiz | 0 | 0 | 0 |
| 10 | Homework | 0 | 0 | 0 |
| 11 | Midterm Project | 0 | 0 | 0 |
| 12 | Midterm Exercise | 0 | 0 | 0 |
| 13 | Final Project | 1 | 10 | 10 |
| 14 | Final Exercise | 0 | 0 | 0 |
| 15 | Preparation for Final Exam | 1 | 1 | 1 |
| 16 | Final Exam | 1 | 2 | 2 |
| | | | | 100 |