OSTIM TECHNICAL UNIVERSITY
FACULTY OF ECONOMICS AND ADMINISTRATIVE SCIENCES
BUSINESS ADMINISTRATION DEPARTMENT
COURSE SYLLABUS FORM

MIS 443 IT Configuration Management							
Course Name	**Course Code**	**Period**	**Hours**	**Application**	**Laboratory**	**Credit**	**ECTS**
IT Configuration Management	MIS 443	1	3	0	0	3	6

Language of Instruction	English
Course Status	Compulsory
Course Level	Bachelor
Learning and Teaching Techniques of the Course	Lecture, Question-Answer, Problem Solving

Course Objective

Configuration management (CM) is a process for establishing and maintaining consistency of a product's performance, functional, and physical attributes with its requirements, design, and operational information throughout its life. The CM process is widely used by military engineering organizations to manage changes throughout the system lifecycle of complex systems, such as weapon systems, military vehicles, and information systems. Outside the military, the CM process is also used with IT service management as defined by ITIL, and with other domain models in the civil engineering and other industrial engineering segments such as roads, bridges, canals, dams, and buildings.

Learning Outcomes

The students who succeeded in this course will be able;

1. To master the basic concepts of configuration management systems,
2. To comprehend value of CMS for different stakeholders
3. To cope with barriers and utilize critical success factors
4. To utilize methods and techniques to improve an existing Configuration Management Process
5. To understand and apply the concept of CM with Ansible
6. Elaborately program with Ansible and test the outcomes.
7. Manage large server environments using Ansible as a tool of CM.

Course Outline

Configuration Management (CM) comprises a collection of activities focused on establishing and maintaining the integrity of products and systems, through control of the processes for initializing, changing, and monitoring the configurations of those products and systems. In this course after gaining

the theoretical understanding of the CM, student will be able to comprehend and apply Ansible platform which s one of the frequently used free product in the market.		
Weekly Topics and Related Preparation Studies		
Weeks	**Topics**	**Preparation Studies**
1	Course Introduction Ch-1: Introduction to the configuration management system (CMS) Ch-2: The 21st-Century CMDB/CMS	– Configuration management database – Knowledge capture during the interactive sessions – The normative view of what a CMS is for – Barriers to implementation
2	Ch-3: Judging the value of CMDB/CMS Ch-4: Overcoming the Barriers to the CMS Ch-5: Case study of a CMS implementation	– The value of a CMS – ITIL value statements – Value of CMS for different stakeholders – Barriers and critical success factors – CMS at associated newspapers
3	Ch-6: How to Improve an Existing Configuration Management Process Ch-7: Service Management Requirements for a CMDB/CMS Ch-8: Strategy and Vision	– What techniques/processes do you have in place to detect failures? – Service Management Requirements for a CMDB/CMS – Service asset and configuration management visions and strategies
4	Ch-9: Selecting CMS Tools Ch-10: Populating a CMDB: Process Design Ch-11: Implementation Ch-12: Good ideas… and ones to avoid	– A basic implementation process – Process Design – Practical requirements for the different approaches – What works and what does not
5	Ch-1: Configuration Management with Ansible	– Getting Started with Configuration Management – Getting Started with Ansible
6	Ch-2: Ansible Playbooks	– Ansible and YAML Syntax – Command-Line Modules to Ansible Playbooks – Ansible Syntax in Finer Detail – Adding More Playbook Functionality with Variables and Loops
7	Ch-3: Extending Playbooks with Roles and Templates	– Ansible Roles – Ansible Command-Line Variables and Options – Expanding Our LAMP with Django – Conditional Tasks in Ansible – Using Tags to Run Specific Tasks
8	**MIDTERM EXAM**	

9	Ch-4: Custom Ansible Modules, Vaults, and Galaxies	– Keeping Secrets with Ansible Vault – Ansible Galaxy, – Building Your Own Ansible Modules
10	Ch-5: Working with Ansible in the Amazon Cloud	– So Why Amazon Web Services? – Gaining Access to AWS – Using Environment Variables to Access AWS – Ansible AWS Modules to Implement Our New Project – Creating Our AWS Instance – Deploying Splunk with User Data – Failures on Amazon Web Services
11	Ch-6: Ansible Templates and Cloud Formation Scripts	– One Final Word on AWS Costs – Ansible Templates in AWS Instances – Pulling Code with Ansible – Ansible Pull GitHub Repository Deployment Explained – Build AWS Images for Quicker Deployments – Using CloudFormation with Ansible
12	Ch-7: Ansible Troubleshooting and Variables	– AWS Modules Run Differently – Using the Debug Module with Registered Variables – Ansible Facts – Ansible Galaxy README Files – Testing Ansible as You Develop
13	Ch-8: Testing Ansible with Molecule	– Ansible Testing with the Molecule Testing Framework – Using Molecule with Code Deployed to AWS – Update Tests to Match Our AWS Instance – CICD with TravisCI – Using AWS on TravisCI
14-15	Managing Large Server Environments	– Managing Inventory and Hosts Files – Introducing Ansible Tower – Installing AWX Ansible Tower – Getting Started with AWX Ansible Tower
16	**FINAL EXAM**	

Textbook(s)/References/Materials:
Textbook: Lacy, S., & Norfolk, D. (2014, January). Configuration Management: Expert guidance for IT service managers and practitioners-Revised edition. BCS. Sesto, V. (2022) Practical Ansible: Configuration Management from Start to Finish. Apress
Supplementary References: Quigley, J. M., & Robertson, K. L. (2019). Configuration Management: Theory and Application for Engineers, Managers, and Practitioners. CRC Press.
Other Materials: Rhett, J. (2016). Learning Puppet 4: A guide to configuration management and

automation. " O'Reilly Media, Inc.".

Assessment		
Studies	**Number**	**Contribution margin (%)**
Attendance		
Lab		
Class participation and performance	1	10
Field Study		
Course-Specific Internship (if any)		
Quizzes / Studio / Critical		
Homework		
Presentation		
Projects	1	10
Report		
Seminar		
Midterm Exam/Midterm Jury	**1**	**30**
General Exam / Final Jury	**1**	**50**
Total		**100**
Success Grade Contribution of Semester Studies		**50**
Success Grade Contribution of End of Term		**50**
Total		**100**

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Course hours (Including the exam week): 16 x total course hours)	16	3	48
Laboratory			
Application			
Course-Specific Internship (if any)			
Field Study			
Study Time Out of Class	16	3	48
Presentation / Seminar Preparation			
Projects	1	10	10
Reports			
Homework			
Quizzes / Studio Review	5	1	5
Preparation Time for Midterm Exams / Midterm Jury	2	20	40
Preparation Period for the Final Exam / General Jury	1	40	40
Total Workload	**(181/30 = 6,36)**		**181**

Course' Contribution Level to Learning Outcomes						
Nu	**Learning Outcomes**	**Contribution Level**				
		1	**2**	**3**	**4**	**5**
LO1	To master the basic concepts of configuration management systems,					X
LO2	To comprehend value of CMS for different stakeholders					X
LO3	To cope with barriers and utilize critical success factors					X
LO4	To utilize methods and techniques to improve an existing Configuration Management Process					X
LO5	To understand and apply the concept of CM with Ansible					X
LO6	Elaborately program with Ansible and test the outcomes.					X
LO7	Manage large server environments using Ansible as a tool of CM.					X

	Relationship Between Course Learning Outcomes and Program Competencies (Department of Management Information Systems)								
Nu	**Program Competencies**	**Learning Outcomes**							**Total Effect (1-5)**
		LO1	**LO2**	**LO3**	**LO4**	**LO5**	**LO6**	**LO7**	
1	Recognize and distinguish the basic concepts such as data, information, and knowledge in the field of Management Information Systems and know the processes to be followed for data acquisition, storage, updating, and security.	x			x	x		x	**5**
2	Develop and manage databases suitable for collecting, storing, and updating data.			x	x			x	**5**
3	As a result of his/her ability to think algorithmically, and easily find solutions to problems concerning basic business functions.		x	x		x	x		**5**
4	Learn programming logic, and have information about current programming languages.			x		x	x	x	**5**
5	Be able to use up-to-date programming languages.				x	x	x	x	**5**
6	Be able to take part in teamwork or lead a team using knowledge of project management processes.	x							**3**
7	Know ethical and legal rules, and use professional field knowledge within the scope of ethical and legal rules.								
8	Know the fundamental areas of business administration namely management and organization, production, finance, marketing, numerical methods, accounting, etc., and have the knowledge and skills to work in-depth in at least one								

	of them.								
9	Be able to solve the problems encountered in the field of internet programming by designing web applications.					x	x	x	**4**
10	Develop and manage logistics and supply chain management activities								
11	Adapt his/her theoretical knowledge and the experience he/she will gain through practice at the departments of businesses such as information technologies, R&D, and management to real life.								
12	Be able to develop strategies that will provide a competitive advantage with his/her advanced knowledge of management strategies and management functions.		x	x	x				**3**
13	Develop a business idea, commercialize the business idea, and design and manage his/her venture using entrepreneurial knowledge.					x	x	x	**3**
14	By using English effectively, they can follow, read, write, speak and communicate universal information in the field of management information systems in a foreign language with professional competence.	x	x	x	x	x	x	x	**4**
Total Effect									**42**

Policies and Procedures
Web page: https://www.ostimteknik.edu.tr/management-information-systems-english-1241/915
Exams: The exams aim at assessing various dimensions of learning: knowledge of concepts and theories and the ability to apply this knowledge to real-world phenomena, through analyzing the situation, distinguishing problems, and suggesting solutions. The written exams can be of two types, ie. open-ended questions, which can also be in the form of problems or multiple-choice questions.
Assignments: Quizzes and Homework (Assignments) might be applicable. Scientific Research Ethics Rules are very important while preparing assignments. The students should be careful about citing any material used from outside sources and reference them appropriately.
Missed exams: Any student missing an exam needs to bring an official medical report to be able to take a make-up exam.
Projects: A group project with teamwork is welcome.
Attendance: Attendance requirements are announced at the beginning of the term. Students are usually expected to attend at least 70% of the classes during each term.
Objections: If the student observes a material error in his/her grade, he/she has the right to place an objection to the Faculty or the Department. The claim is examined and the student is notified about its outcome.