Identification	Subject	CMS 115 Computer Application in Engineering, 3 KU (6 ECTS) credits
	Department	Computer Science
	Program	Undergraduate
	Term	Fall 2022
	Instructor	Humay Huseynova
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	Phone:	(+994 12) 421-79-27
	Classroom/hours	41 Mehseti str. (Neftchilar campus)
	Office hours	Weekdays 9 am to 6 pm
Prerequisites	English	
Language	English	
Compulsory/Elective	Compulsory	
Required textbooks and course materials	*Core textbooks:* 1. Microsoft Excel 2016, Step by Step. Curtis D. Frye. (MicrosoftPress, 2016) 2. Microsoft PowerPoint 2016, Step by Step, Joan Lambert (MicrosoftPress, 2016) 3. Exploring Microsoft Access 2016 Comprehensive, Mary Anne Poatsy etal. (Pearson)	
Course outline	This course intends to facilitate students with foundation in Computer Science. Lecture notes given in classes will be conducted by examples. First lectures are designed to give an overview on computers' generation and their history. Later, computer components, computer languages, computer network types and system design will be discussed. Next classes will be dedicated to detailed observation on different computer-based applications. Mainly, Microsoft Office programs (Access, Excel, and PowerPoint) will be explained with complementary examples and exercises. At the end, Internet architecture, the business application of Internet and some general aspects of computer security.	
Course objectives	• To provide students with core understanding of computer science and its application in engineering. • To familiarize students with computers' history, terminology, components and system hardware and software design. • To prepare students to use the computer for later course work and to move directly into the workforce as a productive employee. • The focus of this course is on engineering applications of software, including spread sheets (MS. Excel), databases (MS. Access), presentation graphics (MS PowerPoint), and business utilization of the Internet.	

Learning outcomes	Upon completion of this course, the students must be able to: ✓ Apply course material to improve thinking skills. ✓ Acquire factual/practical knowledge related to business and technology. ✓ Use standard spreadsheet features to produce a representation and analysis of numerical data. ✓ Create and maintain databases and generate customized reports. ✓ Develop professional PowerPoint slides and present their skills and viewpoints.	

Teaching methods	**Lecture**	x
	Group discussion	x
	Lab	x

	Methods	**Date/deadlines**	**Percentage (%)**
Evaluation	**Midterm Exam**		**30%**
	Assignment and quizzes		**20%**
	Project		**10%**
	Final Exam		**40%**
	Total		**100%**

Policy	**Preparation for class** The lecture material will focus on the major points introduced in the text. Reading the assigned chapters and having some familiarity with them before class will greatly assist your understanding of the lecture. **Project** Student should prepare a project using Power Point, Excel or Access. The topic of the presentation will be given by teacher. If students have own idea of topic, they can choose it after teacher's confirmation. Students should present their topic until end of December. **Withdrawal (pass/fail)** This course strictly follows grading policy of the School of Engineering and Applied Science. A student is expected to achieve a mark of at least 60% to pass. In case of failure, he/she will be required to repeat the course the following term or year. **Cheating/plagiarism** Cheating or other plagiarism during the Quizzes, Mid-term and Final Examinations will lead to paper cancellation and grade will be zero. **Professional behavior guidelines** The students shall behave in the way to create favorable academic and professional environment during the class hours. **Ethics** Students should not arrive in late to class. All cell phones must be turned off and stowed away before entering class.

Week	Date/Day (tentative)	Topics	Textbook/Assignments
1	21.09.2022 23.09.2022	**Fundamental of Computer** Basic Concepts, Computer Organization, Data, Software/Languages, Communication and Computer Networks	Lecture Slides
2	28.09.2022 30.09.2022	**Spreadsheet** Basic Concepts of Spreadsheet, Using Worksheets to Make Business Decisions, Starting Excel, The Excel Window, Workbook, Entering Data, Editing, Formulas & Formulas	Microsoft Excel 2016 Pages 22 – 50

		Auditing.	
3	05.10.2022 07.10.2022	**Spreadsheet** Data Formatting, printing a Worksheet, Data Sorting, Working with Lists, Data Sorting by Multiple Keys, Conditional Formatting, Conditional Formulas.	Microsoft Excel 2016 Pages 109 – 130
4	12.10.2022 14.10.2022	**Spreadsheet** Analyzing Data with Pivot Tables, Create a Pivot, Change the Layout of a Pivot Table, Add or Remove a Field in a Pivot Table. **(Quiz 1)**	Microsoft Excel 2016 Pages 247 – 277
5	19.10.2022 21.10.2022	**Spreadsheet** Working With Function, Financial, Math & Trig, Statistical, Logical Functions, Condition and Look-up Functions, Excel Charts, Creating Charts, updating a Chart, Data Analysis, Analyzing Statistical Data, Data Filters, Advanced Filter, Modifying an Excel Chart, Formatting Chart Labels.	Microsoft Excel 2016 Pages 79 – 105
6	26.10.2022 28.10.2022	**Spreadsheet** Performing What-if Analysis on Worksheet, Validation, Comments, Nested Logical Function, Macros, Integrating Worksheets with Other Software Applications.	Microsoft Excel 2016 Pages 79 – 105
7	02.11.2022 04.11.2022	**Database Management** Introduction to Database, The Access and Database Windows, Starting Access, Working with Existing Databases, Access Objects, Sorting, Creating an Access Table.	Microsoft Access 2016 Pages 4 – 113 Pages 332 - 355
8	11.11.2022	**Midterm Exam**	
9	16.11.2022 18.11.2022	**Database Management** Exchanging Data between Access and Other Applications, Printing a Table, Access Data Formats, Validation, Relations, The Query Window, Creating and Running a Query, Creating and Printing a Query, Filtering Data	Microsoft Access 2016 Pages 140 – 190 Pages 498 - 550
10	23.11.2022 25.11.2022	**Database Management** Defining Record Selection Criteria for Query, Updating a Database, Formulas in Query, Formulas with Parameters, Access Functions.	Microsoft Access 2016 Pages 218 - 244
11	30.11.2022 02.12.2022	**Database Management** Creating and Printing a Form, Creating and Printing a Report, Updating/Modifying the Database Using Forms, Modifying Structure of an Access Table.	Microsoft Access 2016 Pages 270 -307
12	07.12.2022 09.12.2022	**Database Management** Creating a Dashboard or Switchboard in Access, Mail Merge and Email Merge from Access. **(Quiz 2)**	Lecture Slides & Classroom Practice
13	14.12.2022 16.12.2022	**PowerPoint** The PowerPoint Window, Starting PowerPoint, Viewing Slides in Slide View, Animations, Effects, Editing/Controlling the Presentation in View Mode.	Microsoft PowerPoint 2016 Pages 1 - 56

14	21.12.2022 23.12.2022	**PowerPoint** Changing the Design Template, Changing the Slide Layout, Creating Speaker/Presenter Notes, Viewing the Completed Slide Show. Printing the Completed Slide Show.	Microsoft PowerPoint 2016 Pages 60 - 345
15	28.12.2022 30.12.2022	**Future Trends in Information Technology + Computer Protection & Security** Fundamentals of Internet, Business Utilization of Internet, Threats to Computer Systems, Basic Protection Mechanisms. Course Wrap-up.	Lecture Slides & Notes
16	06.01.2023	**Final Exam**	