Identification	**Subject**	CMS 115 - Computer Application in Engineering-3 KU (6 ECTS) credits
	Department	Computer Science
	Program	Undergraduate – Group B
	Term	Fall, 2019
	Instructor	Sadiq Ali Behzad
	E-mail:	sah7743@gmail.com
	Classroom/hours	41 Mehseti str. (Neftchilar campus)
Prerequisites	CMS 101 – Introduction to Computer Science	
Language	English	
Compulsory/Elective	Required	
Required textbooks and course materials	***Core textbooks:*** 1. Microsoft Excel 2016, Step by Step. Curtis D. Frye. (Microsoft Press, 2016) 2. Microsoft PowerPoint 2016, Step by Step, Joan Lambert (Microsoft Press, 2016) 3. Exploring Microsoft Access 2016 Comprehensive, Mary Anne Poatsy et al. (Pearson)	
Course outline	This course intends to facilitate students with foundation in Computer Science. Lecture notes given in classes will be conducted by examples which are crucial for better understanding of material. 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 get acquainted with different Microsoft Office programs (Excel, Access, Power Point). • To prepare students to use the computer for later course work and to move directly into the workforce as a productive employee. • The main focus of this course is on engineering applications of software, including spreadsheets (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. ✓ Explain general structure of computer networks related to an office environment and the Internet. ✓ Demonstrate themselves as a valuable asset opportunity for hiring companies.	

Teaching methods	**Lecture**		x
	Group discussion		x
	Experiential exercise		x
	Lab		x
	Case analysis		
	Course paper		
	Others		
Evaluation	**Methods**	**Date/deadlines**	**Percentage (%)**
	Midterm Exam		30
	Case studies		
	Attendance		10
	Assignment and quizzes		20
	Project		
	Presentation/Group Discussion		
	Final Exam		40
	Others		
	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. After the lecture, you should study your notes and work relevant problems.		

- **Withdrawal (pass/fail)**
  This course strictly follows grading policy of the School of Engineering and Applied Science. Thus, a student is normally 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. In this case, the student will automatically get zero (0), without any considerations.

- **Professional behavior guidelines**
  The students shall behave in the way to create favorable academic and professional environment during the class hours. Unauthorized discussions and unethical behavior are strictly prohibited.

- **Ethics**
  Students should not arrive in late to class.
  All cell phones must be turned off and stowed away before entering class.
  Use of any electronic devices is not allowed in the classroom and violators will be punished accordingly.

WK	Date/Day (tentative)	Topics	Textbook/Assignments
1	18-Sep-2019 23-Sep-2019	**Fundamental Of Computer** Basic Concepts, Computer Organization, Data, Software/Languages, Communication and Computer Networks	Lecture Slides
2	25-Sep-2019 30-Sep-2019	**Spreadsheet** Basic Concepts of Spreadsheet, Using Worksheets to Make Business Decisions, Starting Excel, The Excel Window, Workbook, Entering Data, Editing, Formulas & Formulas Auditing.	Pages 22 - 50
3	02-Oct-2019 07-Oct-2019	**Spreadsheet** Data Formatting, Printing a Worksheet, Data Sorting, Working With Lists, Data Sorting by Multiple Keys, Conditional Formatting, Conditional Formulas.	Pages 109 - 130
4	09-Oct-2019 14-Oct-2019	**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)**	Pages 247 - 277
5	16-Oct-2019 21-Oct-2019	**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.	Pages 79 - 105
6	23-Oct-2019 28-Oct-2019	**Spreadsheet** Performing What-if Analysis on Worksheet, Validation, Comments, Nested Logical Function, Macros, Integrating Worksheets With Other Software Applications.	Pages 79 - 105
7	30-Oct-2019 04-Nov-2019	**Database Management** Introduction to Database, The Access and Database Windows, Starting Access, Working With Existing Databases, Access Objects, Sorting, Creating an Access Table.	Pages 4 – 113 Pages 332 - 355
8	06-Nov-2019	**Midterm Exam**	
9	13-Nov-2019 18-Nov-2019	**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	Pages 140 – 190 Pages 498 - 550
10	20-Nov-2019 25-Nov-2019	**Database Management** Defining Record Selection Criteria for Query, Updating a Database, Formulas in Query, Formulas with Parameters, Access Functions.	Pages 218 - 244
11	27-Nov-2019 02-Dec-2019	**Database Management** Creating and Printing a Form, Creating and Printing a Report, Updating/Modifying the Database Using Forms, Modifying Structure of an Access Table.	Pages 270 - 307
12	04-Dec-2019 09-Dec-2019	**Database Management** Creating a Dashboard or Switchboard in Access, Mail Merge and Email Merge From Access. **(Quiz 2)**	Lecture Slides & Classroom Practice

13	11-Dec-2019 16-Dec-2019	**PowerPoint** The PowerPoint Window, Starting PowerPoint, Viewing Slides in Slide View, Animations, Effects, Editing/Controlling the Presentation in View Mode.	Pages 1 - 56
14	18-Dec-2019 23-Dec-2019	**PowerPoint** Changing the Design Template, Changing the Slide Layout, Creating Speaker/Presenter Notes, Viewing the Completed Slide Show. Printing the Completed Slide Show.	Pages 60 - 345
15	25-Dec-2019 30-Dec-2019	**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-Jan-2020	**Final Exam**	

This syllabus is a guide for the course and any modifications to it will be announced in advance.