Eastern Mediterranean University
Faculty of Engineering
Department of Mechanical Engineering
PRINCIPLES OF COMPUTER AIDED ENGINEERING – MENG303

Instructor: **Assoc. Prof. Dr. Qasim Zeeshan**

Assistant/ Lab Instructor: Mr. Mustafa Glaissa

STUDENT'S

Name, Surname: …………………………………..

Student Number: …………………………………

Question	Marks	
Q1	10	
Q2	10	
Q3	10	
Q4	10	
Q5	10	
Q6	10	
Q7	10	
Q8	10	
Q9	10	
Q10	10	
TOTAL		

Assignment 2
Due Date: 25 May 2018

Note: All answers should be hand written

1. **What is Design for Environment? Explain the Design for Environment Guidelines. (10 pts.)**

2. **A. What is Design For Cost (DFC)**
    B. Identify and explain various Direct, Indirect, Fixed and Variable Costs for a Product?
    C. What is the Design Cost as a fraction of Manufacturing Cost.
    D. How does the design quality effects on the Manufacturing Cost.

    (10 pts.)

3. Identify the 7 Factors which determine the Cost of Machined Components: (10 pts)

4. **Explain the difference between Design for Assembly (DFA) and Design for Manufacturability (DFM) and list the 10 DFA Principles. (10 pts.)**

5. What is Design for End of Life, explain the steps, basic flow and percentage of materials recovered End-of-Life Vehicles (ELVs) with a flowchart?
(10 pts.)

6. **Define Mechanical Failure and identify the typical causes of Mechanical Failure.**

7. What are the causes of Engineering Changes, and what is the necessary information in an ECN? (10 pts.)

8. Describe the criteria for deciding on Make or Buy and Vendor Selection.. (10 pts)

9. Explain the Classical Rule of Thumb Factor of Safety by estimating the Contribution for the Material, Load Stress, Geometry, Failure Analysis, and Reliability.   **(10 pts)**

10. A. Explain Design for Reliability.
    B. Explain various types of Failure Mode and Effect Analysis.
    C. Develop the FMEA of a Human Powered Vehicle as system.

(10 pts)