DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
INDUSTRIAL ENGINEERING PROGRAM, BSC.

Course Syllabus

1. **Course number and name**
   IE 234 Statistics and Excel Lab

2. **Credits and contact hours**
   (0+1) 1 credit hours, 3 contact hours

3. **Course type**
   Blended Learning Course (2+1)

4. **Instructor's or course coordinator's name**
   Eng.Dana Salameh

5. **Textbook information**
    Manual book of Statistics & OR Lab
     a. **Other supplemental materials**
   Douglas C. Montgomery (Author), George C. Runger. "Applied Statistics and Probability for Engineers ", 5th Edition, wiley, 2010

6. **Specific course information**
     a. **Catalog description**
        Learn Basic Excel operations and functions. Making Charts and figures in Excel. Data Exploration and Analysis in Excel. Use application Packages in the field of Probability and statistics to solve real life problems exercises in Minitab.

     b. **Prerequisites or co-requisites**
        Prerequisite: IE 232 Statistics and Probability 2

     c. **The course is:**
        Required in the Industrial Engineering program.

7. **Specific goals for the course**
     a. **Course outcomes:**
        After completion of the course, students are expected to be able to:
        1. Learn Basic Excel operations and functions
        2. Organize data in tables and make useful charts for data using Excel
        3. Sort through data using filtering and pivot tables using Excel
        4. Use Minitab for analyzing data, computing statistics, and performing ANOVA Analysis
        5. Explore and Analyze data using modern engineering tools

b. The following student outcomes are addressed by the course:

SO-(a) an ability to apply knowledge of mathematics, science, and engineering

SO-(b) an ability to design and conduct experiments, as well as to analyze and interpret data

SO-(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

8. Learning Outcomes and their Alignment with Program Educational Objective (PEO's), Methods of Delivery, and Assessment Methods:

Learning Outcomes	Program PEOs	Method of Delivery	Assessment Method
Course Outcomes			
CO-(1): Learn Basic Excel operations and functions	-	Lab Lecture	Assignment
CO-(2): Organize data in tables and make useful tables for data in Excel	-	Lab Lectures	Assignment
CO-(3): Sort through data using filtering and pivot tables in Excel	-	Lab Lectures	Assignment
CO-(4): Use Minitab for analyzing data, computing, statistics, and performing ANOVA analysis	-	Lab Lectures	Assignment
CO-(5): Explore and Analyze data using modern engineering tools	-	Lab Lectures	Assignment
Student Outcomes			
SO-(a) an ability to apply knowledge of mathematics, science, and engineering		Lab Lectures	Midterm Exam
SO-(b) an ability to design and conduct experiments, as well as to analyze and interpret data		Lab Lectures	Assignment
SO-(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice		Lab Lectures	Assignment

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9. Weekly Teaching Plan

Lecture Week	Topic	Method of Delivery
1	Excel Basics introduction	Lab Lecture
2	Excel Basic operations and functions (mathematical)	Lab Lecture
3	Excel Basic operations functions (filtering, lookup, etc.)	Lab Lecture
4	Excel Charts	Lab Lecture
5	Excel Charts	Lab Lecture
6	Excel Pivot Tables	Lab Lecture
7	Excel Pivot Tables	Lab Lecture
8	Excel Data Analysis Tool Pack	Lab Lecture
9	Excel Data Analysis Tool Pack	Lab Lecture
10	Excel Data Analysis Tool Pack	Lab Lecture
11	Introduction to Minitab	Lab Lecture
12	Minitab Statistical Analysis	Lab Lecture
13	Minitab Statistical Analysis	Lab Lecture
14	Minitab Statistical Analysis	Lab Lecture
15	Minitab	Lab Lecture

1. Grade Distribution:

Assessment	Grade	Week No.
- Midterm Exam	30%	7th Week
-Assignments (Reports /Quizzes/ Seminar / Tutorials/ Home works ….)	30%	1-16th Week
- Final Examination	40%	16th Week

Note: Make-up exams will be offered for valid reasons. It may be different from regular exams in content and format.