



COMPUTER APPLICATIONS
MS[®] EXCEL FOR ENGINEERS



LECTURE 1
INTRODUCTION

Walid Ahmed Daoud

September 2016



COURSE INFORMATION

Course Title

Computer Applications: MS Excel for Engineers

Lecturers

- **Taha A. Ibrahim**
- **Walid A. Dawoud**

Used Software

Microsoft EXCEL 2010

References

- **Mastering Excel 2010 (Author: Bill Jelen)**
- **Excel 2013 for Scientists and Engineers (Author: Gerard Verschuuren)**
- **Excel Scientific and Engineering Cookbook (Author: David M. Bourg)**



COURSE CONTENTS

- **PART 1**
 - Lecture 1: **Introduction**
 - Lecture 2: **Entering Data**
 - Lecture 3: **Using Excel Formula**
 - Lecture 4: **Working with Graphs**
 - Lecture 5: **Using Built-in Functions**
 - Lecture 6: **Working with Matrices**
 - Lecture 7: **Excel project**
- **PART 2**
Dr. Taha A. Ibrahim



LECTURE 1: INTRODUCTION

- **Course Outline**

This course will cover **spreadsheet based analysis** for general purpose engineering use. It will focus on using basic **calculations, formula, and graphs** within Microsoft Excel™. Several sample problems will be modeled, accompanied by sample spreadsheets which may be downloaded and used for understanding the examples.

- **Course Perquisite**

Basic knowledge of PCs

- **Course Benefits**

The students will obtain the **basics** required for setting up a **spreadsheet based analysis**, and be introduced to some features they might not ordinarily use, such as **data filtering, logical tests, and goal seeking** solutions.



COURSE OBJECTIVES

At the end of this course, the student will:

- Understand the **basic elements** of a spreadsheet;
- Know the difference between a **workbook** and a **worksheet**;
- Be able to enter a **simple formula**;
- Understand **basic operators** and the **order** of operations;
- Learn what a **function** is, and the syntax of a function;
- Learn to apply **basic math functions** like sin, cosine, and square root;
- Be able to apply **basic logical operations**;
- Learn what **goal seeking** is and how to use it to solve for the optimal answer to a problem;




COURSE OBJECTIVES

Continue,

- Learn how to set up a **data table**;
- Understand how to **sort** data;
- Comprehend basic **filtering** of data;
- Understand basic **chart functionality**;
- Know how to **format cells**;
- Learn about **formatting charts**;
- Be able to set up a problem with **multiple variables** and solve for the best solution;



In the rest of this lecture, you should learn:

- Open and interact with Excel
 - Close Excel
 - Create new workbooks
 - Open and close existing workbooks
 - Save workbooks
 - Recognize the different Excel file types
 - Recognize and work with the active cell
 - Select multiple cells
 - Explore worksheets and workbooks
 - Zoom in and out of a worksheet
 - Open and use the Help interface
- 

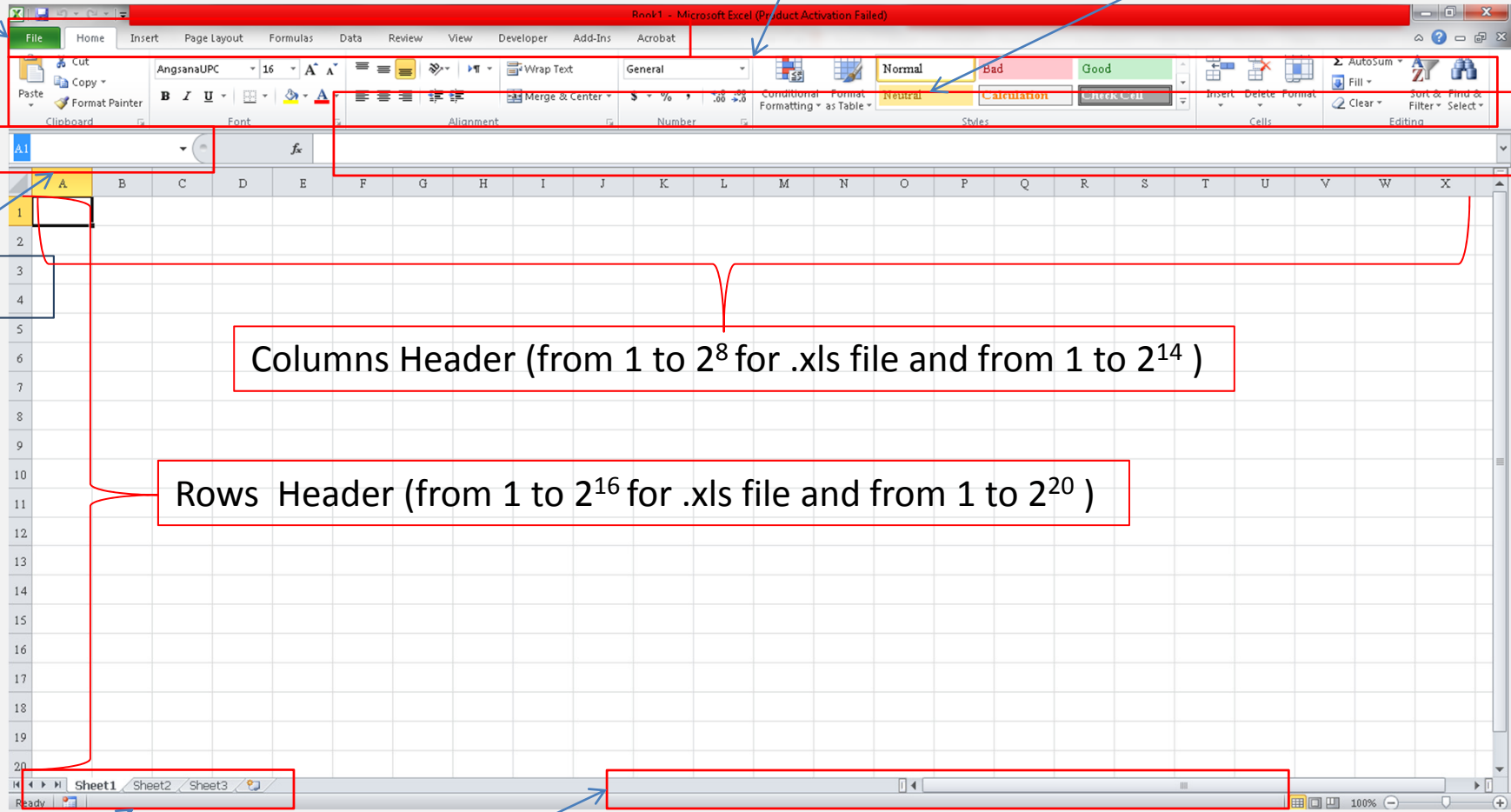


EXCEL 2010 OVERVIEW

Menu Bar

Tools Bar

Formula Bar



Name Box

Columns Header (from 1 to 2^8 for .xls file and from 1 to 2^{14})

Rows Header (from 1 to 2^{16} for .xls file and from 1 to 2^{20})

Sheets Bar

Info Bar



WORKING WITH WORKBOOKS AND WORKSHEETS

- **Creating New Workbook**
- **Saving a workbook (.XLSX, .XLSX,.XLSM)**
- **Opening a workbook**
- **Adding a new worksheet**
- **Deleting a worksheet**
- **Renaming a worksheet**
- **Navigation within a worksheet**
- **Using Excel Help**



SAMPLE APPLICATIONS

- **Sample 1: Design of Multiple Ground Anchors**
- **Sample 2: Drawing in AutoCAD**
- **Sample 3: Modelling in STAAD Pro.**



SAMPLE APPLICATIONS

- **Sample 1: Design of Multiple Ground Anchors**
- **Sample 2: Drawing in AutoCAD**
- **Sample 3: Modelling in STAAD Pro.**



THANKS FOR YOUR KIND
ATTENTION

