HIGHLAND
COMMUNITY COLLEGE

Syllabus
CAD 211 Spreadsheets
3 Credit Hours (Lecture)
Prerequisites: None
Revision Date: 04/27/2018

Department:

Engineering Graphics and Technologies

Course Description:

This spreadsheet application course is designed to show students how to organize data, complete calculations, make decisions, graph data, and develop professional-looking worksheets. The course will also cover Microsoft Windows concepts and terminology.

Course Competencies:

Upon completion of the course, the student should be able to:

1. Understand the definitions and basic operations of tables and charts.
2. Understand and read graphs, including pictographs, bar graphs, line graphs, frequency distributions, and histograms.
3. Understand the definitions and basic operations of statistics, including range mean median, mode, quartiles, and percentiles.
4. Data computation operations.
5. Data selection operations.
6. Cell reference and calculation.
7. Formatting a spreadsheet.

Course Content:

A. Using Tables and Graphics in Excel
   1. Demonstrate an understanding of what a cell is
   2. Demonstrate an understanding of the difference between label and value cell entries
   3. Demonstrate an understanding of how to determine a cell's address
   4. Demonstrate an understanding of what is meant be CONTROL PANEL AREA
   5. Demonstrate an understanding of what the POINTING METHOD is
   6. Demonstrate the ability to determine whether or not any of the <Lock> keys are engaged
   7. Demonstrate the ability to enter a label into a worksheet cell
   8. Demonstrate the ability to enter constant value into a worksheet cell
   9. Demonstrate the ability to enter a formula into a worksheet cell
   10. Demonstrate the ability to edit the contents of a worksheet cell
B. Operators and Functions
   1. Demonstrate an understanding of what order of precedence means
   2. Demonstrate an understanding of how each of the numeric operators is used in formulas
   3. Demonstrate an understanding of what the various categories of functions are
   4. Demonstrate the ability to write formulas using arithmetic operators
   5. Demonstrate the ability to write formulas using functions
C. Formatting the Spreadsheet

1. Demonstrate an understanding of the characteristics of general, fixed, currency, percent, and date formats
2. Demonstrate an understanding of what a range is
3. Demonstrate the ability to insert and delete rows and columns in a worksheet
4. Demonstrate the ability to erase a specific area of the worksheet
5. Demonstrate the ability to reformat values within a specified range
6. Demonstrate the ability to realign labels within a specified range

D. Printing
1. Demonstrate the ability to print all or a portion of a worksheet
2. Demonstrate the ability to enter printer control codes directly into a worksheet

E. Copy and Move Commands
1. Demonstrate an understanding of the variations of the copy command
2. Demonstrate an understanding of how the copy command affects cell addresses
3. Demonstrate an understanding of how the move command affects cell addresses
4. Demonstrate an understanding of the difference between copy and move; when to choose one or the other
5. Demonstrate the ability to copy a portion of the worksheet to a note on the worksheet
6. Demonstrate the ability to move a portion of the worksheet to another place on the worksheet

F. Cell Reference and Calculation
1. Demonstrate knowledge of he distinctions among the three types of cell addresses
2. Demonstrate an understanding of when to use mixed or absolute addresses instead of relative addresses
3. Demonstrate knowledge of when to use manual instead of automatic recalculations
4. Demonstrate an understanding of what material order of recalculation is
5. Demonstrate an understanding of what a circular reference is
6. Demonstrate the ability to enter a formula containing relative, absolute, and mixed method

G. Creating Graphs
1. Demonstrate the ability to define any of the types of graph
2. Demonstrate the ability to add titles and legends to the graph
3. Demonstrate the ability to save the graph for later printing
4. Demonstrate the ability to name the graph for later recall

H. Data Computation Operations
1. Demonstrate an understanding of how to write a formula with one or two variables
2. Demonstrate the ability to fill a range with a series of numbers
3. Demonstrate the ability to compute a one-variable data table
4. Demonstrate the ability to computer a two-variable data table
5. Demonstrate the ability to computer a data distribution
6. Demonstrate the ability to transpose or invert a matrix
7. Demonstrate the ability to multiply two matrices
8. Demonstrate the ability to perform a multiple regression
9. Demonstrate the ability to convert a series of formulas to their values

I. Data Selection Operations
1. Demonstrate knowledge of the definitions of various database terms
2. Demonstrate knowledge of how to specify criteria using label-match, number-match, and formula-comparison
3. Demonstrate the ability to sort a data range using one or two keys
4. Demonstrate the ability to establish and specify input, output, and criterion ranges
5. Demonstrate the ability to find records that match specific criteria
6. Demonstrate the ability to extract records that match specific criteria

7. Demonstrate the ability to compute statistics on records that match specific criteria
    J. Advanced Worksheet Operations
        1. Demonstrate the ability to hide columns
        2. Demonstrate the ability to suppress the display of zero values
        3. Demonstrate the ability to use titles to freeze column or row labels
        4. Demonstrate the ability to name worksheet ranger
        5. Demonstrate the ability to use named ranger in formulas
        6. Demonstrate the ability to establish protected cells
        7. Demonstrate the ability to toggle worksheet protection on and off
    K. Advanced Functions
        1. Demonstrate the ability to design a lookup table
        2. Demonstrate the ability to use the lookup functions to extract data from the table
        3. Demonstrate the ability to write formulas using logical functions and expressions
        4. Demonstrate the ability to write formulas using string function and expression
        5. Demonstrate the ability to write formulas using advanced mathematical functions

Learning Assessments:

Competencies may be evaluated by multiple measures, including exams, papers, article reviews, research, experiments, and projects.

Instructional Materials:

Textbooks: Beskeen, D. W., Cram, C. M., Duffy, J., Friedrichsen, L., & Reding, E. E. (2017). *Illustrated Microsoft Office 365 & Office 2016: Introductory* (1st ed.). Cengage Learning. ISBN-13: 978-1305876026

Guidelines for Requesting Accommodations Based on Documented Disability or Medical Condition

It is the intention of Highland Community College to work toward full compliance with the Americans with Disabilities Act, to make instructional programs accessible to all people, and to provide reasonable accommodations according to the law.

Students should understand that it is their responsibility to self-identify their need(s) for accommodation and that they must provide current, comprehensive diagnosis of a specific disability or medical condition from a qualified professional in order to receive services. Documentation must include specific recommendations for accommodation(s). Documentation should be provided in a timely manner prior to or early in the semester so that the requested accommodation can be considered and, if warranted, arranged.

In order to begin the process all students **must** complete the "Disabilities Self-Identification Form" on our Disability Services website.

This form can also be accessed at the Highland Community College homepage under Students Services/Student Resources/Disability Service or by contacting the Disabilities Coordinator.

A Note on Harassment, Discrimination and Sexual Misconduct

Highland Community College seeks to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX, and College policy prohibit harassment, discrimination and sexual misconduct. Highland Community College encourages anyone experiencing harassment, discrimination or sexual misconduct to talk to report to the Vice President for Student Services, the Human Resources Director or complete an online report about what happened so that they can get the support they need and Highland Community College can respond appropriately.

There are both confidential and non-confidential resources and reporting options available to you. Highland Community College is legally obligated to respond to reports of sexual misconduct, and therefore we cannot guarantee the confidentiality of a report, unless made to a confidential resource. Responses may vary from support services to formal investigations. As a faculty member, I am required to report incidents of sexual misconduct and thus cannot guarantee confidentiality. I must provide our Title IX coordinator with relevant details such as the names of those involved in the incident. For more information about policies and resources or reporting options, please review our Equity Grievance Policy.