Department:

Engineering Graphics & 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. Use tables and graphics in Word
   a. Explain what a cell is
   b. Explain the difference between label and value cell entries
   c. Determine a cell’s address
   d. Explain what CONTROL PANEL AREA means
   e. Explain the POINTING METHOD
   f. Determine whether or not any of the <Lock> keys are engaged
   g. Enter a label, constant value, and formula into a worksheet cell
   h. Edit the contents of a worksheet cell
2. Use operators and functions
   a. Explain what order of precedence means
   b. Explain how each of the numeric operators is used in formulas
   c. Explain the various categories of functions
   d. Write formulas using arithmetic operators
   e. Write formulas using functions
3. Format a spreadsheet
   a. Explain general, fixed, currency, percent, and date formats
   b. Explain what a range is
   c. Insert and delete rows and columns in a worksheet
   d. Erase a specific area of the worksheet
   e. Reformat values within a specified range
   f. Realign labels within a specified range
4. Print worksheets
   a. Print all or a portion of a worksheet
   b. Enter printer control codes directly into a worksheet
5. Use copy and move commands
   a. Explain the variations of the copy command
   b. Explain how the copy command affects cell addresses
   c. Explain how the move command affects cell addresses
d. Explain the difference between copy and move and when to choose one or the other

e. Copy a portion of the worksheet to a note on the worksheet

f. Move a portion of the worksheet to another place on the worksheet

6. Use cell reference and calculation

a. Explain the distinctions among the three types of cell addresses

b. Explain when to use mixed or absolute addresses instead of relative addresses

c. Explain when to use manual instead of automatic recalculations

d. Explain what material order of recalculation is

e. Explain what a circular reference is

f. Enter a formula containing relative, absolute, and mixed method

7. Create graphs

a. Define the types of graphs

b. Add titles and legends to a graph

c. Save a graph for later printing

d. Name a graph for later recall

8. Perform data computation operations

a. Write a formula with one or two variables

b. Fill a range with a series of numbers

c. Compute a one-variable data table

d. Compute a two-variable data table

e. Compute a data distribution

f. Transpose or invert a matrix

g. Multiply two matrices

h. Perform a multiple regression

i. Convert a series of formulas to their values

9. Perform data selection operations

a. Define various database terms

b. Specify criteria using label-match, number-match, and formula-comparison

c. Sort a data range using one or two keys

d. Establish and specify input, output, and criterion ranges

e. Find records that match specific criteria

f. Extract records that match specific criteria

g. Compute statistics on records that match specific criteria

10. Perform advanced worksheet operations

a. Hide columns

b. Suppress the display of zero values

c. Use titles to freeze column or row labels

d. Name worksheet ranges

e. Use named ranges in formulas

f. Establish protected cells

g. Toggle worksheet protection on and off

11. Perform advanced functions

a. Design a lookup table

b. Use the lookup functions to extract data from the table
c. Write formulas using logical functions and expressions  
d. Write formulas using string function and expressions  
e. Write formulas using advanced mathematical functions  

Course Content:

A. Tables and Graphic in Word  
B. Operators and Functions  
C. Formatting the Spreadsheet  
D. Printing  
E. Copy and Move Commands  
F. Cell Reference and Calculation  
G. Creating Graphs  
H. Data Computation Operations  
I. Data Selection Operations  
J. Advanced Worksheet Operations  
K. Advanced Functions  

Learning Assessments:  
Competencies will be assessed by assignments, case problems, quizzes, chapter tests, hands-on projects, lab assignments, midterm test, and final test. The tests may be in the objective format or in a problem solving format.  

Instructional Materials:  

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.  

On-Campus Students: At enrollment, any on campus student may complete a form that will allow them to self-identify any disability.  

Off-Campus Regional Students: Self-identify your disability and accommodation needs with the Regional Coordinator and/or instructor, preferably prior to the first class meeting.
Online Students: Self-identify your disability and accommodation needs by contacting the Disabilities Coordinator. Students must provide their own programs to allow accessibility on their home computer.

Any student may also identify their disability by completing an online form located on the HCC homepage under Students Services/Resources/Disabilities. Questions should be directed to the Disabilities Coordinator.