

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY ITE 140 – SPREADSHEET SOFTWARE (3 CR.)

Course Description

Provides a working knowledge of a commercial spreadsheet package to include designing a variety of worksheets, preparing graphs, working with database query, macro writing, and menu techniques. Lecture 3 hours per week.

General Course Purpose

This course is designed to provide student with a working knowledge of a major microcomputer spreadsheet program. Emphasis is on the functional rather than the technical approach to understanding, using, and managing electronic spreadsheets.

Course Prerequisites/Corequisites

Prerequisite: Students must be able to read and write at a college level

Course Objectives

Upon completing the course, the student will be able to:

- a) Design and create spreadsheets
- b) Effectively use functions and formulae within spreadsheets
- c) Present data using charts
- d) Create and use formatting that enhances the usability of charts and spreadsheets
- e) Use macros as a time-effective way to prepare and maintain spreadsheets
- f) Effectively use decision analysis tools within spreadsheets

Major Topics to be Included

- a) Designating and working with ranges
- b) Applying functions and formulae such as HLOOKUP and VLOOKUP
- c) Formatting spreadsheets, including conditional formatting
- d) Using graphics to enhance the visual appeal of spreadsheets
- e) Executing file operations, including printing and publishing
- f) Working with charts
- g) Working with multiple worksheets and workbooks and consolidated spreadsheets
- h) Working with ranges, lists, and tables
- i) Working with Pivot Tables and Pivot Charts
- j) Performing What-If Analyses
- k) Using a spreadsheet as a database; using data tools to manipulate data
- l) Working with features that enable collaboration
- m) Using Macros and Visual Basic for Applications
- n) Importing data from other application programs such as MS-Word and MS-Access

Student Learning Outcomes

Designating and working with ranges

- a) Selecting cells, images, and charts

- b) Performing Move, Copy, and Paste operations
- c) Using reviewing tools such as spell check
- d) Using Find and Replace features for content and formats
- e) Inserting special characters and symbols
- f) Navigating through a data range
- g) Printing a data range
- h) Creating and using range names

Applying functions and formulas

- a) Creating formulae using the SUMIF, COUNTIF, MATCH and INDEX functions
- b) Moving and copying functions and formulae
- c) Using operator precedence in formulae
- d) Using relative, absolute and mixed references
- e) Using math and statistical functions
- f) Using logical and financial functions such as PMT, FV, and PV
- g) Using text functions
- h) Using nested functions such as IF
- i) Validating data
- j) Auditing worksheet formulas

Formatting spreadsheets, including conditional formatting

- a) Changing fonts and page setup
- b) Using AutoFill, AutoFormat and series
- c) Formatting columns and rows
- d) Merging cells and working with cell alignment
- e) Applying borders and shading
- f) Adding headers and footers
- g) Applying conditional formatting

Using graphics to enhance the visual appeal of spreadsheets

- a) Inserting and formatting Clip Art
- b) Inserting and formatting Pictures
- c) Inserting and formatting SmartArt
- d) Inserting and formatting WordArt
- e) Inserting and formatting Shapes

Executing file operations, including printing and publishing

- a) Saving a worksheet using the default type or different format
- b) Using page setup features to change settings
- c) Creating and deleting manual and automatic page breaks
- d) Previewing and printing or publishing a worksheet

Working with charts

- a) Analyzing worksheet data in order to apply appropriate chart type
- b) Creating charts
- c) Editing chart data and objects
- d) Moving and copying charts

Working with multiple worksheets and workbooks

- a) Renaming and rearranging worksheet tabs
- b) Moving and deleting worksheets
- c) Grouping and ungrouping worksheets
- d) Moving and copying worksheet groups
- e) Managing the workspace
- f) Using links with multiple worksheets and workbooks

- g) Creating 2-D and 3-D references

Working with Ranges, Lists, and Tables

- a) Sorting a range/list/table
- b) Applying Auto filter to a range/list/table
- c) Applying an Advanced filter to a range/list/table
- d) Using AutoFilter to select data based on content and format
- e) Applying subtotals to a list of data
- f) Creating custom views

Working with PivotTables and PivotCharts

- a) Creating and manipulating PivotTables
- b) Creating and manipulating PivotCharts
- c) Applying Trendlines to a PivotChart

Performing What-If Analysis

- a) Using Goal Seek to perform a What-If Analysis
- b) Using Solver to find the optimal solution for a complex problem
- c) Using the Scenario Manager to analyze data involving multiple scenarios
- d) Using the Scenario Manager to create Summary Reports and Scenario PivotTable
- e) Creating One Variable and Two Variable Data Tables

Using a spreadsheet as a database and using data tools to manipulate data

- a) Applying proper design of a spreadsheet database
- b) Manipulating columns of data
- c) Filtering and extracting data
- d) Sorting data
- e) Applying data validation features within a spreadsheet database
- f) Finding and eliminating duplicate records

Working with features that enable collaboration

- a) Protecting worksheets and workbooks
- b) Sharing workbooks
- c) Using tools such as Tracking Changes and adding Comments
- d) Creating and using Templates
- e) Uploading a workbook to SkyDrive

Using Macros and Visual Basic for Applications

- a) Recording and executing a macro
- b) Viewing and printing the VBA code for a macro
- c) Applying appropriate security levels within Excel to control macro execution
- d) Customize the Quick Access Toolbar with a Macro button
- e) Add Form Controls and ActiveX Controls
- f) Edit properties of Form Controls and ActiveX Controls

Interchanging data with other application programs

- a) Using Object Linking and Embedding to share data between worksheets and files
- b) Creating and editing Hyperlinks
- c) Merging data with other documents

EXTRA TOPICS (optional)

- a) Macro programming using the Visual Basic language

Required Time Allocation per Topic

In order to standardize the core topics of ITE140 so that a course taught at one campus is equivalent to the same course taught at another campus, the following student contact hours per topic are required. Each syllabus should be created to adhere as closely as possible to these allocations. Of course, the topics cannot be followed sequentially. Many topics are taught best as an integrated whole, often revisiting the topic several times, each time at a higher level. There are normally 45 student-contact-hours per semester for a three credit course. (This includes 15 weeks of instruction and does not include the final exam week so $15 \times 3 = 45$ hours. Sections of the course that are given in alternative formats from the standard 16 week section still meet for the same number of contact hours.) The final exam time is not included in the time table. The category, Miscellaneous, leaves ample time for an instructor to tailor the course to special needs or resources.

Topic	Hours	Percent
Designating and working with ranges	2	4%
Applying functions and formulae	4	9%
Formatting spreadsheet, including conditional formatting	3	7%
Using graphics to enhance the visual appeal of spreadsheets	1	2%
Executing File operations, including printing and publishing	1	2%
Working with charts	2	4%
Working with multiple worksheets and workbooks	3	7%
Working with ranges, lists, and tables	3	7%
Working with Pivot Tables and Pivot Charts	3	7%
Performing What-If Analyses	3	7%
Using a spreadsheet as a database; using data tools to manipulate data	3	7%
Working with features that enable collaboration	2	4%
Using Macros and Visual Basic for Applications	3	7%
Interchanging data with other application programs	2	4%
Assessment Activities	5	11%
Miscellaneous	5	11%
TOTAL	45	100%