

GBUS 304 Advanced Excel

**Credit Hours:** 3**Scheduled hours per week**

Lecture: #

Lab: #

Other: Hybrid or e-course

**Catalog Course Description:** Using Microsoft Excel, students are taught Excel advanced spreadsheet formatting. Topics include advanced formulas and logical functions, mathematical computations, data analysis, lookups, scenarios, goal seek, chart presentations, pivot tables and charts, data imports, exporting, and linking multiple workbooks, with an emphasis on critical thinking, problem solving, and decision making for marketing, finance, accounting, economics, and management. Additional “advanced hands-on projects and tests” are required.

**Prerequisites:** CS 101**Corequisites:** None**Course learning Outcomes:**

Students should be able to:

Navigate, manipulate, explore, and analyze numeric data using Excel worksheets in workbooks with varying complexity.

Create Excel Templates worksheets.

Create Excel format tools to enhance the appearance of a worksheet through formatting tools, styles, and themes.

Analyze advanced Excel Functions for advanced math functions, trace and fix formula errors, analysis tools and pivot tables and pivot charts, filters, sorts, collaborating with workgroups (sharing workbooks), and importing and exporting data.

Analyze, view, record macros, and use the Visual Basic Editor.

Apply enhance document design and presentation through the use of charts, sorting, bitmapped graphics, and clip art.

Apply strategies for merging and integrating source data from different applications, including the Internet, the commands for linking objects, and embedding files.

**Topics to be studied:****Preparing and Formatting a Worksheet (Core)****Preparing and Formatting a Workbook**

Identify the various elements of an Excel workbook  
 Create, save, and print a workbook  
 Enter data in a workbook  
 Edit data in a workbook  
 Insert formula using the AutoSum button  
 Apply basic formatting to cells in a workbook  
 Use the Help feature

**Formatting an Excel Worksheet**

Change column widths | Change row heights  
 Insert row and columns in a worksheet  
 Delete cells, rows, and columns in a worksheet  
 Clear data in cells  
 Apply formatting to data in cells  
 Apply formatting to selected data using the Mini toolbar  
 Preview a worksheet  
 Apply a theme and customize the theme font and color  
 Format numbers  
 Repeat the last action  
 Automate formatting with Format Painter

**Inserting Formulas in a Worksheet**

Write formulas with mathematical operators  
 Types a formula in the Formula bar  
 Copy a formula  
 Use the Insert Function feature to insert a formula in a cell  
 Write formulas with the AVERAGE, MAX, MIN, COUNT, PMT, FV, DATE, NOW, and IF functions  
 Create an absolute and mixed cell reference

**Enhancing a Worksheet**

Change worksheet margins  
 Center a worksheet horizontally and vertically on the page  
 Insert a page break in a worksheet  
 Print gridlines and row and column headings  
 Set and clear a print area  
 Insert headers and footers  
 Customize print jobs  
 Complete a spelling check on a worksheet  
 Find and replace data and cell formatting in a worksheet  
 Sort data in cells in ascending and descending order  
 Filter a list using AutoFilter

### **Moving Data within and between Workbooks**

Create a workbook with multiple worksheets  
Move, copy, and paste cells within a worksheet  
Split a worksheet into windows and freeze panes  
Name a range of cells and use a range in a formula  
Open multiple workbooks  
Arrange, size, and move workbooks  
Copy and paste data between workbooks  
Link data between worksheets

### **Creating a Chart in Excel**

Create a chart with data in an Excel worksheet  
Size, move, and delete charts  
Print a selected chart and print a worksheet containing a chart  
Choose a chart style, layout, and formatting  
Change chart location  
Insert, move, size, and delete chart labels, shapes, and pictures

## **Advanced Formatting, Formulas, and Data Management**

### **Advanced Formatting Techniques**

Apply conditional formatting by entering parameters for a rule  
Apply conditional formatting using a predefined rule  
Create and apply a new rule for conditional formatting  
Edit, delete and clear conditional formatting  
Apply conditional formatting using an icon set, data bars, and color scale  
Apply conditional formatting using a formula  
Apply fraction and scientific formatting  
Apply a special format for a number  
Create a custom number format  
Apply wrap text and shrink to fit text control options  
Filter a worksheet using a custom AutoFilter  
Filter | sort a worksheet: conditional formatting or cell attributes

### **Working with Tables and Data Features**

Create a table in a worksheet  
Expand a table to include new rows and columns  
Add a calculated column in a table  
Format a table by applying table styles and table style options  
Add a total row to a table and add formulas to total cells  
Sort and filter a table  
Split contents of a cell into separate columns  
Remove duplicate records  
Restrict data entry by creating validation criteria  
Convert a table to a normal range  
Create subtotals in groups of related data  
Group and ungroup data

### **Using Data Analysis Features**

Switch data arranged in columns to rows and vice versa  
Perform a mathematical operation during a paste routine  
Populate a cell using Goal Seek  
Save and display various worksheet models using Scenario Manager  
Create a scenario summary report  
Create a one-variable data table to analyze various outcomes  
Create a two-variable data table to analyze various outcomes  
View relationships between cells in formulas  
Identify Excel error codes and troubleshoot a formula using formula auditing tools

### **Maintaining Workbooks**

Create and rename a folder  
Delete workbooks and folders  
Copy and move workbooks within and between folders  
Copy, move, and rename worksheets within a workbook  
Maintain consistent formatting with styles  
Insert, modify, and remove hyperlinks  
Create financial forms using templates

### **Adding Visual Interest to Workbooks**

Insert symbols and special characters  
Insert, size, move, and format a clip art image  
Insert a screenshot  
Draw, format, and copy shapes  
Insert, size, move, and format a picture image  
Insert, format, and type text in a text box  
Insert a picture image as a watermark  
Insert and format SmartArt diagrams  
Insert and format WordArt

### **Advanced Functions and Formulas**

Create and use named ranges in formulas  
Use functions COUNTA, COUNTIF, COUNTIFS  
Use functions AVERAGEIF, AVERAGEIFS  
Use functions SUMIF, SUMIFS  
Edit a named range  
Rename and delete a named range  
Look up data: VLOOKUP and HLOOKUP functions  
Analyze loan payments using PPMT  
Use conditional logic functions IF, AND, and OR  
Modify text using the text functions PROPER, UPPER, LOWER, and SUBSTITUTE

### **Summarizing and Consolidating Data**

Summarize data by creating formulas with range names that reference other worksheets  
Modify the range assigned to a range name  
Summarize data by creating 3-D formulas  
Create formulas that link to a source worksheets or workbooks  
Edit a link to a source workbook  
Break a link to an external reference  
Use the Consolidate feature to summarize data in multiple worksheets  
Create, edit, and format a PivotTable  
Filter a PivotTable using Slicers  
Create and format a PivotChart  
Create and format Sparklines

### **Protecting and Sharing Workbooks**

Add information to a workbook's properties  
Add comments containing additional information or other notes to the reader  
Share a workbook with other people and view other users who have the shared workbook open at the same time  
Edit a shared workbook and resolve conflicts with changes  
Print a history of changes made to a shared workbook  
Stop sharing a workbook  
Protect cells within a worksheet to prevent changes  
Add a password to open a workbook  
Track changes made to a workbook

## West Virginia University at Parkersburg

Circle invalid data

Use the Watch Window to track a value

### **Automating Repetitive Tasks and Customizing Excel**

Record and run and edit a macro

Save a workbook containing macros as a macro-enabled workbook

Create a macro that is run using a shortcut key combination

Pin and unpin a frequently used file to the Recent Documents list

Add and remove buttons for frequently-used commands to the Quick Access toolbar

Hide the ribbon to increase space in the work area

Customize the display options for Excel

Customize the ribbon by creating a custom tab and adding buttons

Create and apply custom views

Create and use a template

Customize save options for AutoRecover files

### **Specific Functions:**

AutoSum

Absolute References (Turning Off Relative References)

Future Value (FV) Function

Payment (PMT)

Average, Count, Max, Min, Mode

IF Function

Nested IF Functions

AND Function

OR Function

Combination (AND, OR, and IF Functions)

VLOOKUP Function

HLOOKUP Function

### **Advanced 304 Students Required Assessments**

#### **Performance Assessments**

Create Sales Bonuses Workbook

Format Equipment Purchase Plan Workbook

Format Accounts Due Workbook

Format First Quarter Sales Workbook

Format Weekly Payroll Workbook

Format Customer Sales Analysis Workbook

Format Invoices Workbook

#### **Performance Assessments**

Conditionally Format and Filter a Help Desk Worksheet

Use Conditional Logic Formulas in a Help Desk Worksheet

Use Table and Data Management Features in a Help Desk Worksheet

Add Subtotals and Outline a Help Desk Worksheet

Use Financial and Text Functions to Analyze Data for a Project

Analyze Sales Using a PivotTable, a PivotChart, and Sparklines

Link to an External Data Source and Calculate Distributor

Payments

## Uniform Course Syllabus (UCS)

Modify and resolve tracked changes

### **Importing, Exporting, and Distributing Data**

Import data from an Access table, a website, and a text file

Append data from an Excel worksheet to an Access table

Embed and link data in an Excel worksheet to a Word document

Copy and paste data in an Excel worksheet to a PowerPoint presentation

Export data as a text file

Scan and remove private or confidential information from a workbook

Mark a workbook as final

Check a workbook for features incompatible with earlier versions of Excel

Save an Excel worksheet as a PDF or XPS file

Save an Excel worksheet as a web page

Send an Excel worksheet via an email message

Save an Excel worksheet to a SkyDrive

SUMIF Function

COUNTA and COUNTIF

AVERAGEIF

Financial Assumptions

Cash Analysis (NPV Function)

TODAY Function

YEAR Function

MONTH Function

DATE and DAY Functions

CONCATENATE Function

SEARCH, LEFT, LEN, and MID Functions

ISNUMBER and ISTEXT Functions

#### **Performance Assessments**

Copy and Paste Data | Insert WordArt

Manage Multiple Worksheets in a Projected Earnings Workbook

Create Charts in Worksheets in a Sales Totals Workbook

Create and Format a Line Chart | Pie Chart

Insert a Text Box | Save a Travel Workbook as a Web Page

Insert Clip Art Image and SmartArt Diagram in a Projected

Quotas Workbook

Insert Symbol, Clip Art, and Comments in a Sales Workbook

Insert and Format a Shape in a Budget Workbook

#### **Performance Assessments**

Use Goal Seek and Scenario Manager to Calculate Investment Proposals

Calculate Investment Outcomes for a Portfolio Using a Two-Variable Data Table

Solve an Error and Check for Accuracy in Investment

Commission Formulas

Document and Share a Workbook and Manage Changes in an Investment Portfolio Worksheet

Insert Comments and Protect a Confidential Investment Portfolio Workbook

Automate and Customize an Investment Portfolio Workbook

Create and Use an Investment Planner Template

Export a Chart and Prepare and Distribute an Investment

Portfolio Worksheet

<b>Bachelors of Applied Science in Business Administration</b>	
<b>(BASBA) Program Outcomes</b>	
<i>Business Information Technology concentration (BIT):</i>	
Communicate effectively and professionally both orally and in writing including complex report generation.	
Demonstrate and integrate the use functional areas of business including accounting, economics, finance, global business, management, marketing and the legal environment of business.	X
Demonstrate the ability to work ethically, effectively, and respectfully with people of diverse backgrounds and with people whom have different roles, social affiliations, and personalities.	
Use accounting software such as QuickBooks to manage accounting functions for statement preparation by accountants or external analysts.	X
Build on the competencies developed in the AAS in Business Technology to demonstrate competence in the use of electronic tools –hardware and software --to research, manage, and present information including word processing, spreadsheet, and presentation software.	X
Demonstrate and integrate the use functional areas of business including accounting, finance, management, and marketing in a professional business or administrative office.	X

<b>Bachelors of Science in Business Administration</b>	
<b>(BSBA) Program Outcomes</b>	
<i>General Business Specialization (GenBus):</i>	
Communicate effectively and professionally both orally and in writing including complex report generation.	
Demonstrate the use of quantitative skills in analysis of complex business decisions with a global perspective.	X
Demonstrate and integrate the use functional areas of business including accounting, economics, finance, global business, management, marketing and the legal environment of business.	
Demonstrate the ability to work ethically, effectively, and respectfully with people of diverse backgrounds and with people whom have different roles, social affiliations, and personalities.	
Demonstrate the ability to solve complex business and organizational problems using programmed and non-programmed decision techniques using logical reasoning for evaluating information and data.	X
Apply best practices in management of functional areas including Human Resources, development and analysis of organizational design and structure, and leadership techniques to manage a team or department.	
Demonstrate an understanding of complex marketing concepts including developing and deploying research studies for data collection and analysis, creating and deploying both B2C and B2B functions including procurement, supply chain management, and other marketing analysis.	X
Be admission-ready for a Master of Business Administration program if desired.	

<b>Relationship of Course to General Education Learning Outcomes:</b>	
<b>Composition and Rhetoric</b> Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	X
<b>Science &amp; Technology</b> Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	X
<b>Mathematics &amp; Quantitative Skills</b> Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	X
<b>Society, Diversity, &amp; Connections</b> Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
<b>Human Inquiry &amp; the Past</b> Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	
<b>The Arts &amp; Creativity</b> Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
<b>10/20/2107</b>	

Students should be able to:

Demonstrate an understanding of the various components of Excel to create and edit spreadsheets of varying complexity.

Analyze numerical data and project outcomes to make informed decisions.

Create, plan, research, revise, and publish worksheets and workbooks to meet specific communication needs.

Analyze basic financial statements, purposes, and use needed by business decision makers.

Understand ethical values and behavior for problem solving and decision making.

Analyze the impact of functions and formulas on business transactions and financial reports using Excel .

Understand global business environment.

**Special projects or requirements of the course:**

Hands-on Excel Applications

Online Assessment Excel Theory Tests

Excel Advanced Performance Assessments Applications

**Additional information:**

None

**Prepared by:**

Carol C. Thomas, Professor

**Date:** October 20, 2017