

MIST 2610 • Management Information Systems

Excel Expected Competencies

By the end of this course, students should be able to **use the following Excel features** — moreover, students should know **when it is appropriate to use which feature** (e.g., when to use a PivotTable vs =COUNTIF() say). Thanks to Prof. Andrew Idzikowski for this initial compilation of skills.

- A. Follow the MIST 2610 Excel standards as listed on the next page of this document and general good practices of using “spreadsheet engineering” to design / develop spreadsheets.
- B. Create formulas using relative, mixed, and absolute reference to make the formulas portable (being able to create a formula in one cell and copy it across the range as needed).
- C. Use appropriate “Lookup & Reference” functions such as **VLOOKUP**, **HLOOKUP**, **LOOKUP**, **CHOOSE**, **MATCH**, **INDEX** in a particular problem-solving scenario.
- D. Use appropriate “Logical” functions such as **IF**, **IFS**, **AND**, **OR**, **NOT** in a particular problem-solving scenario.
- E. Use appropriate “Information” functions such as **ISBLANK**, **ISERROR** in a particular problem-solving scenario.
- F. Use appropriate “Text” functions such as **LEFT**, **RIGHT**, **MID**, **LEN**, **CHAR**, **LOWER**, **UPPER**, **PROPER**, **TRIM**, **SEARCH**, **FIND**, **EXACT**, **CLEAN**, **CONCAT** in a particular problem-solving scenario.
- G. Use appropriate “Date & Time” functions such as **YEARFRAC**, **TODAY**, **NOW**, **WEEKDAY**, **DAYS** in a particular problem-solving scenario.
- H. Calculate payment for a loan using an appropriate financial function.
- I. Use appropriate conditional functions **SUMIF**, **SUMIFS**, **COUNTIF**, **COUNTIFS**, **COUNTA**, **COUNT** in a particular problem-solving scenario.
- J. Use appropriate math and statistical functions such as **SUM**, **AVERAGE**, **MEDIAN**, **MIN**, **MAX**.
- K. Create up to three-levels nested functions (when a function’s attribute includes another function).
- L. Select appropriate data for creation of charts such as Pie, Column/Bar, Stacked Column/Bar, Line, Combo, Histogram, Scatter, Sparklines. Label and format charts properly as required.
- M. Create and format simple pivot table reports (using up to five variables). Apply variety of filters including a time slice (a.k.a. timeline slicer).

- N. Use What-If-Analysis tools such as Goal Seek, Data Tables (one and two variable), Scenario Manager and Solver in simple scenarios.
- O. Design and implement a small complexity worksheet. Examples: Grade Calculation, Home Budget, etc.
- P. Format numeric, numeric with text, and date values. Numeric values must have commas separating thousands. Dollar values must be formatted with commas and either 2 decimals or no decimal places. Use custom formats for text, dates, and numeric values. Dates must be formatted using ISO standard [YYYY]-[MM]-[DD]. Even better is **YYYY-MMM-DD**.
- Q. Create a simple macro. ← we'll see if we have time for this.

MIST 2610 Excel Standards: (referred to in point "A") above:

Excel Standards: Common Issues	Correct Solution	Incorrect Solution
<p><i>Hardcoding values in formulas</i></p> <p>Acceptable values: 0, 1, 12 (months), 24 (hours), "" (null value)</p>	<p>=COUNTIF(A5:A50,\$B\$2) Cell B2 contains the value of "CA"</p>	<p>=COUNTIF(A5:A50,"CA")</p>
<p><i>Double summing up.</i></p>	<p>=SUM(A5,A6)</p>	<p>=SUM(A5+A6)</p>
<p><i>Using the SUM function for serialized values.</i></p> $= \sum_{i=1}^{12} Expenses_i$	<p>=SUM(A1:A12)</p>	<p>=A1+A2+A3+A4+A5+A6+A7+A8+A9+A10+A11+A12</p>
<p><i>Using the SUM function for non-serialized values.</i></p> <p>Salary = Total Wages + Bonus – Income Tax</p>	<p>=A10+B10-C10</p>	<p>=SUM(A10,B10,-C10)</p>
<p><i>Not implementing a formula correctly.</i></p> <p>Profit = (Product Price - Product Cost) * Qty</p> <p>Discount = Rate * Invoice Total</p>	<p>=(A2-B2)*C2 =IF(B10>\$A\$5,\$A\$6,0)*C10</p>	<p>=SUM(A2,-B2)*C2 =IF(B10>\$A\$5,\$A\$6*C10,0)</p>
<p><i>Using unnecessary parenthesis.</i></p>	<p>=A2+B2 =(A2-B2)*C2</p>	<p>=(A2+B2) =((A2-B2)*C2)</p>
<p><i>Using unnecessary spaces in formulas.</i></p>	<p>=A2+B2</p>	<p>=A2 + B2</p>

Excel Standards: Common Issues	Correct Solution	Incorrect Solution
	=VLOOKUP(A2,B20:B30,2,FALSE)	=VLOOKUP(A2, B20:B30, 2, FALSE)
<i>Using 0 or 1 instead of False or True as identified in function's syntax. E.g. VLOOKUP</i>	=VLOOKUP(A2,B20:B30,2,FALSE) =VLOOKUP(A2,B20:B30,2,TRUE)	=VLOOKUP(A2,B20:B30,2,0) =VLOOKUP(A2,B20:B30,2,1)
<i>Using other than ISO date format. Unless specifically requested otherwise!</i>	yyyy-mm-dd (e.g. 2007-12-11)	07-12-11