

ENGG 1801

EXCEL

- Use \$ to make cell constant **absolute referencing**
- It's possible to rename cells
 - Cell name **CANNOT BE SAME** between sheets in same file
 - Cell name is **NOT CASE SENSITIVE**
 - Names such as 'c', 'r' are not allowed
- Functions list

SIN()	ASIN()	RADIANS()	ROUND()
COS()	ACOS()	DEGREES()	CELLING()
TAN()	ATAN()	ABS()	FLOOR()
- IF statement syntax

=IF(test, action if true , "action if false")

*** "" are needed to display characters**

Nested IF statements

=IF(test1, IF(test2, actionTT, actionTF), actionF)
- Error Values

Error values

Displayed value	Meaning
#DIV/0	Division by 0
#NAME?	Undefined variable / function name
#N/A	No value available
#NULL!	A result has no value
#NUM!	Numerical error (e.g. <code>SQRT (-1)</code>)
#REF!	Invalid cell reference
#VALUE!	Invalid input type (e.g. <code>SQRT ("abc")</code>)

Tips

1. Strict Layout
2. Simplify functions in cell

- OR Function
Syntax: OR (condition 1, condition 2)
False only if both False, Truth for every condition else
- AND Function
Syntax: AND(condition 1, condition 2)
True only if both true, False for every condition else
- Combine IF OR and AND

e.g. =IF(OR(OR(temp>=70, temp<4), AND(pressure>30, temp>50)), "Danger", temp)

- Function PI
=PI()

Examples of functions	
AVERAGE	Finds the average of values in a range of cells
COUNT	Counts how many cells contain numbers in a range of cells
COUNTA	Counts how many non-empty cells are in a range of cells
SUMIF	Adds up only those values in a range of cells that meet some condition
COUNTIF	Counts only those values in a range of cells that meet some condition

ENGG1801 Engineering Computing
Jason Chan

29

-
- **SUMIF Function**
=SUMIF(B2:B7, ">=50") add content only when it's greater than 50
- **COUNTIF Function**
=COUNTIF(B2:B7, ">=50") count cells which are greater than 50
- **Scatter Plots and Line Plot**
Scatter plots treat x-values as **numbers** (e.g. x-y plane)

Line plots treat x-values as **categories** (e.g. populations of countries)

- **Matrix Calculation**

- Select matrices that need to be calculated and give them names.
- Highlight result cells
- Plus or Minus
 - Enter = Matrix_A + / - Matrix_B
- Multiplication
 - Enter = MMULT (Matrix_A, Matrix_B)
- Inverse
 - Enter = MINVERSE(Matrix_A)
- Press **Ctrl+Shift+Enter**