

DSO 401: Data Analysis with Spreadsheets

USC Marshall
School of Business

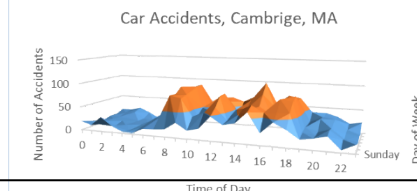
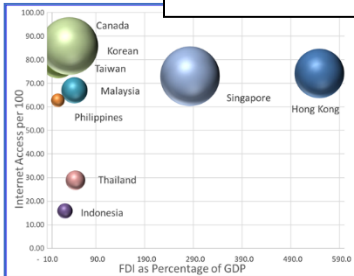
Data Sciences
&
Operations

More Information
Contact
Francis Pereira, Ph.D.
Assoc. Professor
pereira@marshall.usc.edu

Who should take this course?

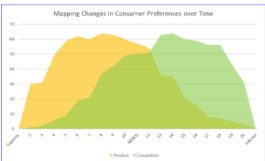
- Students who are interested in working in the finance, real-estate and consultancy fields especially.
- Students who want to master the use and design of spreadsheets using Excel 365 in areas of information systems, marketing and operations
- Students who want to have data analytical skills as a hiring competitive advantage

What Can Excel Do?

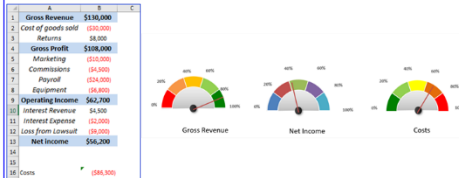


Dynamic Dashboard & Charts

Data Visualization: Creating Dynamic Charts with Sumifs



Data Visualization: Dynamic Dash-Board



Course Objectives

- Systematically build spreadsheet-based business and other models
- Present data effectively through the use of graphs, pivot tables and other data visualization tools
- Apply various logical, lookup and reference functions to extract appropriate values from datasets
- Effectively apply advanced data analytic tools, including advance filters, scenario managers and the solver to achieve optimal solutions in data analysis
- Utilize macros to effectively increase efficiency in data extraction and analyses
- Create basic custom functions

TOPICS COVERED

- Workshop #2
Conditional Formatting & Data Visualization
- Workshop #3
The IF Function: The workhorse of Excel
- Workshop #4:
Lookup and Reference Functions
- Workshop #5:
Understanding Array Functions & Syntax
- Workshop #6
Excel's SUMIFS, Date and Time Functions
- Workshop #7
Choose, Errors & Pivot Tables (I)
- Workshop #8
Pivot Tables (II) & Gauge Charts
- Workshop #9
Sorting, SubTotal, Outline & Advanced Filter
- Workshop #10
Text Functions & Regression Review
- Workshop #11
Indirect & Advance Topics (I) Goal Seek Data Tables
- Workshop #12 & #13
Advanced Topics (II) Macros, Custom Functions & Solver

Custom Functions

```

Function ConfidenceP(P, N, Alpha)
MT = WorksheetFunction.Norm_S_Inv(1 - Alpha / 2)
MG = Sqr((P * (1 - P)) / N)
ConfidenceP = MT * MG
End Function

Function SubThe(A)
If Left(A, 4) = "The " Then
SubThe = WorksheetFunction.Substitute(A, "The ", " ")
Else
SubThe = A
End If
End Function
    
```

Complex Functions

=IF(E2-F2*XLOOKUP(C2,Reference_Table!\$A\$2:\$A\$6,Reference_Table!\$D\$2:\$D\$6)>0,(E2-F2*XLOOKUP(C2,Reference_Table!\$A\$2:\$A\$6,Reference_Table!\$D\$2:\$D\$6))*XLOOKUP(C2,Reference_Table!\$A\$2:\$A\$6,Reference_Table!\$E\$2:\$E\$6),0)

Basic Functions

MAXIFS, MINIFS, SUMIFS, XLOOKUP
ARRAY SYNTAXES:
LARGE(IF(B2:B297="Full Time",IF(C2:C297=5,D2:D297)),2)