

**Sabancı MBA Program**  
**Spring 2022**  
**OPIM 529 – Advanced Excel for Managers**

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Type	Time	Days	Where
Class	12:40-15:30	Mondays	In-Class & Online (Zoom)

**Course Objectives:**

The objective of this course is to provide the skills necessary to efficiently develop analytical spreadsheets in MS Excel that meet professional standards.

**Learning Outcomes:**

Upon successful completion of the course, the student should be able to:

1. Develop Excel spreadsheets that meet critical elements of style so that the worksheet is readable, change-tolerant and correct.
2. Create charts that are appropriate for the purpose and meet generally accepted quality standards.
3. Perform data analysis to explain, summarize and interpret data.
4. Make use of Excel's database functionality to process large amounts of data to perform data analysis and develop queries.
5. Audit a spreadsheet that may have been developed by someone else

**Optional Reading Material:**

You may benefit from the following web sites, since there is always more to learn.

- John Walkenbach, The tips section of <https://spreadsheetpage.com/>
- European Spreadsheet Risks Interest Group, [www.eusprig.org](http://www.eusprig.org)
- Fundamentals of Data Visualization: A Primer on Making Informative and Compelling Figures, <https://clauswilke.com/dataviz/>

You may also benefit from the following books on data visualization:

- Berinato, S. (2016). *Good charts: The HBR guide to making smarter, more persuasive data visualizations*. Harvard Business Review Press.
- Knaflic, C. N. (2015). *Storytelling with data: A data visualization guide for business professionals*. John Wiley & Sons.
- Cairo, A. (2012). *The Functional Art: An introduction to information graphics and visualization*. New Riders.
- Tufte, E. (2001). *The visual display of quantitative information*.

## Course Web:

All pre-lecture videos, PowerPoint slides and Excel files, practice questions and their solutions and other course related material will be available at OPIM 529 SUCourse site.

## Instructional Design – Method of Learning:

This course uses a **hybrid model of learning**, which is also known as the “**flipped classroom**”. For every week approximately one third to half of the weekly material to be covered is delivered **asynchronously** (through the pre-recorded videos provided on SUCourse) and remaining part is delivered **synchronously** in the classroom starting at 12:40 on Mondays as approximately up to two-hour sessions. Attendance to these two-hour sessions is mandatory (except for valid health reasons).

For the **asynchronous component**, a set of videos for each week’s lecture topics will be posted on SUCourse on Thursday-Friday of the previous week. The accompanying material covered in these recorded lectures is also provided as a zip file on the SUCourse. This zip file contains the slides and the Excel file that contains all the examples covered in the lecture slides (actually two Excel files will be provided: one that contains the completed examples and another that is the “shell” file that does not have the formulas/charts etc. that will be done).

Each week before the lecture, the students are required to learn the corresponding topics at their own pace by watching the videos and completing all the examples at their own pace (see the course schedule provided at the end of this syllabus for the topics of each week). It may help to have the lecture slides file (or a printed version) to be open while working on the examples so that you can take notes on it. In addition to the lecture material a set of practice questions are provided separately on SUCourse.

For the **synchronous component**, during the Monday sessions starting at 12:40, the instructor will generally:

- Answer the questions the students may have on that week’s topics.
- Give in-class exercises (one or more questions) to the students which involve work on more complicated examples. These in-class exercises will help the instructor assess how well the assigned topic has been learned by the students and give an opportunity to provide additional help and guidance. It is natural that the students differ in the time it takes to complete these given in-class exercises. However, after the first couple of weeks, all the topics are new to all the students and the time required to complete the in-class exercises is negatively correlated with how well the student has learned posted topics by following the asynchronous component of the course. Hence, do not feel too much time pressure but know that while you are completing the compulsory in-class exercises other students will be working on optional in-class exercises which are extra bonus points.
- Introduce additional related material, if needed.

## Grading:

Participation:	10%
In-Class Exercises:	30%
Homework Assignments:	30%
Term Project:	30%

## **Requirements:**

### Attendance

Attending the sessions every Monday is mandatory except for plausible reasons such as health reports. Due to electricity or internet glitches, the students will be allowed to work offline on the assigned in-class class exercise during the class hours and the solutions of in-class exercises can be emailed to the instructor at the end of the synchronous class session. Considering this is an MBA class, if there are no plausible reasons, the students are expected to be physically in the class for the synchronous part of the course. However, whenever there is valid reason to attend the synchronous course using the “online” option, please send an email to the instructor before the lecture.

### In-Class Exercises

Several in-class exercises will be assigned during the two-hour sessions. You are expected to work on the assigned in-class exercises by communicating with both your classmates and the instructor. Although these in-class exercises will be graded, they are not quizzes but means to demonstrate the learning of topics that were introduced to you through the online materials.

### Homework Assignments

As Excel skills can be developed only by doing, we will have four or five homework assignments that will be submitted individually through Assignments in SUCourse.

### Term Project

The term project will be done in teams of 1-2 students. The students are expected to find a data set and perform data analysis to explain, summarize and interpret data. The project also includes creating charts that are appropriate for the data analysis. The main deliverables are an Excel file and a summary report.

For the term project, the students can seek data sets from the following sites:

- <https://www.kaggle.com/datasets>
- <https://archive.ics.uci.edu/ml/index.php>
- <https://github.com/awesomedata/awesome-public-datasets>
- <https://www.telusinternational.com/articles/the-50-best-free-datasets-for-machine-learning>

### Interviews

As part of the assessment of all course requirements, the faculty member may invite a student or a team for an online interview to go through the solutions and underlying the Excel files. Considering the guidelines provided to the faculty members, it is at the full discretion of the faculty member to make these interviews or not. The guidelines provided for the interview require the recording of the online interview. It is worthwhile to note that students should not feel stressed due to the possibility of the conduct of the interviews as in OPIM 529 they will be done only on a need basis. Students are expected to check their emails regularly and positively respond to the interview email in a timely manner (within two business days is acceptable).

## **Academic Honesty:**

Learning is enhanced through cooperation and as such you are encouraged to work in groups, ask for and give help freely in all appropriate settings. At the same time, as a matter of personal integrity, you should only represent your own work as yours. Any work that is submitted to be evaluated in this class should be an original piece of writing, presenting your ideas in your own words. Everything you borrow from books, articles, or web sites (including those in the syllabus) should be properly cited. Although you are encouraged to discuss your ideas with others (including your friends in the class), it is important that you do not share your writing (slides, MS Excel files, reports, etc.) with anyone. Using ideas, text and other intellectual property developed by someone else while claiming it is your original work is *plagiarism*. Copying from others or providing answers or information, written or oral, to others is *cheating*. Unauthorized help from another person or having someone else write one's paper or assignment is *collusion*. Cheating, plagiarism and collusion are serious offenses that could result in an F grade and disciplinary action.

Specific to this course, it is important to know that submitting a computer file (e.g. Excel workbook) prepared by someone else, *even partially*, is cheating. You may talk to others about assignments but in the end, you should be doing all the work. It is important that you do not share your solutions as Excel files with anyone until it has been graded. Sharing your file with others could easily tempt them to submit part or all of it as their own. This would be cheating and, in most cases, easy to detect. Once you share your file with someone, it could easily be forwarded to a lot of students and some of whom could cheat or plagiarize. Plagiarism is a very serious misdeed that can result in a reduced grade or an F (for the assignment and/or the course). *Please pay utmost attention to avoid such accusation.*

## **Classroom Policies and Conduct**

Sabancı MBA Program **values participatory learning**. Establishing the necessary social order for a **participatory learning environment requires that we all:**

- Start each fifty-minute class session on time.
  - This involves coming to each class (physically and/or on zoom) on time.
  - This also requires careful scheduling and execution of your activities during the break so as to ensure your on-time presence back in the class.
- The students will be required to connect to the OPIM 529 zoom link in every class session.
- Come prepared having watched the videos, completed all these examples on their own before we meet in the class.

## Course Schedule:

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<b>Week 1</b>	<b>Date:</b> February 28, 2022 Monday
<b>Topic 1:</b>	<b>Excel Basics and Style Guidelines</b>
<b>Topic 2:</b>	<b>Charts – Scatter Plot</b>
Topic 1 videos (73 min):	Ex 1 Basic formulas such as SUM and IF functions and an introduction to \$ fixation (12 min) Ex 2 Using \$ sign in cell reference (9 min) Ex 3 SUMPRODUCT function (4 min) Ex 4 COUNTIF, SUMIF, AVERAGEIF functions (19 min) Ex 5 Logical calculations - AND.OR functions (10 min) Ex 6 Review of Simple IF, Nested IF functions (12 min) Ex 7 Review of COUNTIF and SUMIF functions (7 min)
Topic 2 video (13 min):	Ex 1 Creating a scatter plot (13 min)

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<b>Week 2</b>	<b>Date:</b> March 07, 2022 Monday
<b>Topic 3:</b>	<b>Functions with Multiple Conditions</b>
<b>Topic 4:</b>	<b>Charts – Histogram</b>
Topic 3 videos (28 min):	Ex 1 SUMIF, COUNTIF, AVERAGEIF functions for review – Incorporating condition using the expression (6 min) Ex 2 SUMIF, COUNTIF, AVERAGEIF functions with extensions (4 min) Ex 3 SUMIFS, COUNTIFS, AVERAGEIFS functions (12 min) Ex 4 COUNTIFS and AVERAGEIFS functions for review (6 min) Ex 2 SUMIFS, COUNTIFS, AVERAGEIFS functions (10 min)
Topic 4 videos (40 min):	Ex 0 Defining range names (5 min) Ex 1 – Part 1: An overview of frequency tables and histograms (14 min) Ex 1 – Part 2: Creating the frequency tables and drawing the histogram (13 min) Ex 1 – Part 3: Creating and modifying the histogram (8 min)

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<b>Week 3</b>	<b>Date:</b> March 14, 2022 Monday
<b>Topic 5:</b>	<b>Text Functions</b>
<b>Topic 6:</b>	<b>Date Functions</b>
Topic 5 videos (32 min):	Ex 1 Separating text into subtexts (25 min) Ex 2 PROPER and REPLACE functions (7 min)
Topic 6 videos (23 min):	Ex 1 Basic date/time functions (17 min) Ex 2 Dealing with work-days (6 min)

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<b>Week 4</b>	<b>Date:</b> March 21, 2022 Monday
<b>Topic 7:</b>	<b>Database Functionality – Tables and Filters</b>
<b>Topic 8:</b>	<b>Database Functionality – Pivot Tables</b>
Topic 7 video (51 min):	Ex 1 Sorting, Filtering and SUBTOTAL function (29 min) Ex 2 With Office 365 new UNIQUE, FILTER & SORT functions (17 min) Ex 3 With Office 365 new SORTBY function (5 min)
Topic 8 videos (27 min):	Ex 1 Basic Pivot tables (18 min) Ex 2 Working with dates in Pivot Tables (4 min) Ex 3 A final trick by using Excel's Table Formats (5 min)

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**Week 5**            **Date:** **March 28, 2022 Monday**  
                         **Topic 9:** **Excellence in Statistical Charts**  
                         **Topic 10 – Part 1:** **Database Functionality – VLOOKUP and HLOOKUP functions**

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Topic 9 videos (38 min): Ex 1 Overview – Excellence in statistical charts (15 min)  
Ex 2 Bubble Chart (8 min)  
Ex 3 Pie Chart (10 min)  
Ex 4 Population Pyramid (5 min)

Topic 10 videos (24 min): Ex 1 VLOOKUP function – Includes new XLOOKUP function (9 min)  
Ex 2 HLOOKUP function – Includes new XLOOKUP function (9 min)  
Ex 3 VLOOKUP – using approximate match - Includes new XLOOKUP function (6 min)

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**Week 6**            **Date:** **April 04, 2022 Monday**  
                         **Topic 10 – Part 2:** **OFFSET, MATCH and INDEX functions**

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Topic 10 videos (41 min): Ex 1 COUNTA, MATCH and OFFSET functions (12 min)  
Ex 2 Dynamic summations with OFFSET and MATCH functions (8 min)  
Ex 3 Dynamic summations with OFFSET, MATCH and IFERROR functions (13 min)  
Ex 4 MATCH and INDEX functions (3 min)  
Ex 5 INDEX function (5 min)

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**Week 7**            **Date:** **April 11, 2022 Monday**  
                         **Topic 11:** **Error proofing etc.**  
                         **Topics 12:** **Sensitivity Analysis**

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Topic 11 videos (46 min): Ex 1 Using Conditional Formatting (3 min)  
Ex 2 Using Form Control Tools such as List Box and Combo Box (12 min)  
Ex 3 Using Form Control Tools such as Scroll Bar (8 min)  
Ex 4 A Decision Support System for Determining the Location of a Copy Room Using Two Scroll Bars - Fractional values with scroll bar (10 min)  
Ex 5 Using Formula Auditing Tools (13 min)  
Ex 4 Sensitivity analysis using data tables (9 min)

Topic 12 videos (30 min) Ex 1-4 One-way Data Table, Ex 2 Two-Way Data Table, Ex 3 Goal Seek, and Ex 4 Scenario Manager (24 min)  
Ex 6 Two-Way Data Table (6 min)

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**Week 8**            **Date:** **April 18, 2022 Week**  
                         **Term Project (Report and Presentation) Submission**

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