Excel advanced

Lecturer: Federica Valsecchi

Language

English

Course description and objectives

The course covers advanced Excel features, including structured tables, complex functions, what-if analysis, pivot tables and macros, using examples and targeted exercises. The objective of the course is to delve deeper into the functionalities available in Microsoft Excel so that the user can fully understand the potential of this application, in order to operate effectively and professionally both in academic and corporate environments.

Attention
The contents of this course largely follow what is covered in the following curricular courses: Computer Science, Computer Skills and Computer Skills for Economics.
The course is structured in order to prepare the participants for the following certifications: **ICDL Advanced Spreadsheets (Excel)** and **Microsoft Office Specialist (MOS): Excel Expert**.

At the end of the course participants will be able to:

- Effectively organize data in a spreadsheet
- Use structured tables
- Analyze data using complex functions and tools
- Import external data into Excel
- Manage Excel charts in an advanced manner
- Apply advanced formatting to worksheets

Audience

The course is open to all Bocconi students. In particular, it is designed for:

- Undergraduate students who have successfully passed Computer science, Computer skills or Computer skills for economics exams and who want to improve their skills in Excel

- Undergraduate students who want to get the following certifications: **ICDL Advanced Spreadsheet (Excel)** and **Microsoft Office Specialist (MOS): Excel Expert**
- All those who need to manage and process data in a professional manner for their academic or professional activities
- Graduate students who didn't attended undergraduate courses in Bocconi and thus have not taken Computer science, Computer skills or Computer skills for economics exams

Prerequisites

Having achieved the ICDL standard certification (or ECDL Core/New ECDL) or having equivalent skills. In particular, it is required to know:

- How to enter data in Excel
- How to manage worksheets
- How to build simple formulas
- How to create charts
- How to format data

Guidelines

Registration:

You can sign up for the course only through the yoU@B student Diary, in the " **sign-up for various activities**" box (please note that the box appears only when registrations open. Before then it will not be visible).
You can only cancel your registration by diary **no later** than the registration deadline for the course itself. No other ways of cancellation are allowed. Registration will be confirmed a few days before the start of the course through a message posted in the yoU@B student Diary.

Attendance:

- Attendance of **75% or more** of class hours: obtainment of the **Open Badge**
- Attendance of **less than 25%** of class hours: **blacklisting**

Duration

20 hours

Teaching mode

This course will be taught in person. Distance mode will not be provided.

Calendar

Lecture	Date	Time	Room
1	Thu 20/03/2025	18.15 - 19.45	N30 (Velodromo)
2	Fri 21/03/2025	14.45 - 16.15	N30 (Velodromo)
3	Fri 21/03/2025	16.30 - 18.00	N30 (Velodromo)
4	Fri 28/03/2025	14.45 - 16.15	N30 (Velodromo)
5	Fri 28/03/2025	16.30 - 18.00	N30 (Velodromo)
6	Thu 03/04/2025	18.15 - 19.45	N30 (Velodromo)
7	Fri 11/04/2025	14.45 - 16.15	201 (Sarfatti)
8	Fri 11/04/2025	16.30 - 18.00	201 (Sarfatti)
9	Fri 18/04/2025	14.45 - 16.15	N30 (Velodromo)
10	Fri 18/04/2025	16.30 - 18.00	N30 (Velodromo)

Note: lessons will be held in the traditional room and **all the students have to bring their own device**.

Syllabus of the course

Lecture	Topics	Book references
1	**Basic commands, advanced formatting and templates** - Review of basic topics - Cell references: relative, absolute and mixed - Three-dimensional references - Cell filling options - Paste special - Advanced formatting - Worksheet management - Templates **Formulas auditing and data validation** - Formula debugging - Data validation ***Exercises***	**Textbook:** **1.1, 1.2, 1.3, 2.3.4** **ICDL syllabus:** **1.1, 1.2, 2.1.10, 2.1.11, 5.1, 5.2, 6.2** **MOS Syllabus:** **2.1, 2.2, 2.3, 3.5**
2	**Data management** - Sorting - Automatic and advanced filtering - Subtotals **Functions (part 1 of 4)** - Database functions (DSUM, DAVERAGE, etc.) - Functions SUMIFS, AVERAGEIFS, etc. ***Exercises***	**Textbook:** **1.4, 3.1, 3.6, 4.3, 4.4** **ICDL syllabus:** **2.1.4, 2.1.8, 4.2** **MOS Syllabus:** **2.2, 3.1**

Lecture	Topics	Book references
3	**Functions (part 2 of 4)** - Financial functions: PMT, PV, FV, NPER, RATE - Logical functions: IF, AND, OR, XOR, NOT, IFS, SWITCH - Lookup and reference functions: VLOOKUP, HLOOKUP, MATCH, INDEX - Nested functions ***Exercises***	**Textbook: 1.2.8, 1.2.9, 1.2.10, 3.2, 3.3, 3.5** **ICDL syllabus: 2.1.2, 2.1.6, 2.1.7, 2.1.9** **MOS Syllabus: 3.1, 3.2, 3.4.3, 3.4.4**
4	**Structured tables** - Format as table - Table's references and functionalities - Convert to interval **Functions (part 3 of 4)** - Date and time functions: TODAY, NOW, DAY, MONTH,YEAR, WEEKDAY, WORKDAY, etc. ***Exercises***	**Textbook: 3.4** **ICDL Syllabus: 2.1.1** **MOS Syllabus: 3.3**
5	**Functions (part 4 of 4)** - Mathematical and statistical functions: ROUND, ROUNDUP, ROUNDDOWN, COUNT, COUNTA, COUNTBLANK, RANK.EQ - Text functions: RIGHT, LEFT, MID, FIND, SEARCH, UPPER, LOWER, etc. ***Exercises***	**Textbook: 1.2.5, 1,2.7, 3.7** **ICDL Syllabus: 2.1.3, 2.1.4, 2.1.5** **MOS Syllabus: 3.1**

Lecture	Topics	Book references
6	**Advanced chart management** - Creation of combined charts with columns and lines - Adding a secondary axis to a chart - Management of data sets - Advanced chart formatting **Data protection** - Protection of worksheets and workbooks - Opening and editing password ***Exercises***	**Textbook:** **1.5, 2.4** **ICDL Syllabus:** **3.1, 3.2, 7.1** **MOS Syllabus:** **1.2, 4.1**
7	**Data linking** - Hyperlinks - Links to external worksheets and workbooks **Importing data** - Importing data (Legacy procedures, a brief introduction to PowerQuery) - Text to columns **Consolidate data** ***Exercises***	**Textbook:** **1.4.2, 2.1, 2.3.5** **ICDL Syllabus:** **6.3** **MOS Syllabus:** **1.1.2, 3.4.1**
8	**Data analysis** - Pivot tables - Pivot charts **What-if analysis** - Scenarios - Goal seek - Data table ***Exercises***	**Textbook:** **4.1, 4.5** **ICDL Syllabus:** **4.1, 4.3, 6.1** **MOS Syllabus:** **3.4.2, 4.2, 4.3**

Lecture	Topics	Book references
9	**Automation** - Record and run a macro - Examples of problems that can be solved using the macro recorder ***Exercises***	**Textbook: 2.5** **ICDL Syllabus: 6.4** **MOS Syllabus: 1.1.1, 1.1.3, 3.6**
10	***Summary exercises*** **Sample Test - ICDL Advanced Spreadsheets**	

Software used

Microsoft Excel 2019 (Office365)

Suggested bibliography

- M. Ballerini, A. Clerici, M. De Pra, *Excel for students in economics and finance*, Egea, 2020
- M. Ballerini, A. Clerici, M. Debernardi, D. Del Corno, M. De Pra, *Excel workbook*, 3rd ed., Egea, 2021

Available seats

70 – Master of Science's students
40 – all the other students

Registrations cannot be carried out once this number has been reached or after closing of the registration period.

Spreadsheet paths

This course can be intended as part of a wider path: