



Issued by **University of Basilicata**  
SINCE

TAGS: *Microsoft Excel, Spreadsheet, Statistics*



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## Advanced Excel: data analysis and statistical indicators

The holder of this badge has attended the course **"Advanced Excel: data analysis and statistical indicators"** organized by the University Basilicata as part of the **"Competenze trasversali in Unibas"** Project.

The "Advanced Excel: data analysis and statistical indicators" course provides knowledge, skills and abilities related to the Microsoft Excel Spreadsheet program. Taking for granted the knowledge of basic functionalities such as managing workbooks, sheets and cells, using data of various formats, using functions, working with text, creating and modifying graphs, the course focuses on aspects related to " data analysis, in particular on the creation of pivot tables and queries, on simulation analysis with objective research, scenarios, solver and forecasts, "what if" analysis, on frequency distributions, on statistical indicators such as central trend measures (mean, mode and median, kurtosis and symmetry), measures of shape (symmetry and kurtosis), measures of variability such as variance, standard deviation, covariance and linear correlation, on the normal and t distribution, on sampling, on the linear regression. The use of this program has a significant impact in terms of improving individual and group work, even at a distance, with important repercussions on the work front, support for teaching and research.

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The skills developed include both the technical skills necessary to move with awareness in the vast field of software functionality as well as the ability to find solutions to problems of various kinds and in various fields of application.

The course is divided into 8 phases, in which theoretical moments and laboratory activities (prevalent) will alternate:

1. The PIVOT and QUERY tables: creation and analysis with summary operations and graphical representation with the decision support dashboards
2. Simulation analysis: objective research, scenarios and the solver with applications to practical cases; WHAT-IF analysis and forecasts
3. Descriptive statistics with the analysis of the mean, fashion and median on practical examples
4. The analysis of the variability of the data with the variance, the standard deviation of a variable, the analysis of two variables with the covariance and the correlation
5. The study and realization of data tables with normal distribution functions and t
6. Sampling of a data population
7. Linear regression
8. Applications of data analysis in various sectors of university course

At the end of the laboratory, students will be able to create complex spreadsheets that manage a variety of data types for the analysis of the information content of the data and their statistical trend, linking together data also coming from different or imported sheets, from external sources.

The skills will be applied in the construction of various spreadsheets for each of the analytical characteristics and statistical parameters. These works will be both individual and group: students will discover the value of sharing knowledge and co-producing the final result.

## Skills

The owner of this Badge has proven to have the following skills:

- Ability to understand, select and produce a solution
- Ability to translate the terms of the problem into computer operations
- Ability to produce digital spreadsheets

The owner of this badge has shown that he has acquired the following soft skills:

- Ability to coordinate with other users
- Ability to exercise the critical spirit in evaluating the resources to be used
- Ability to negotiate content to find the solution to the problem
- Ability to communicate effectively
- Ability to adopt the principles of information sharing

The owner of this badge has shown that he has acquired the following knowledge:

- Microsoft Excel
- Complex tables of data, with formulas and graphs
- Data analysis and statistical analysis

## Criteria

The Badge is awarded following the attendance of the " Advanced Excel: data analysis and statistical indicators " course, which provides the information and digital skills necessary to navigate the world of spreadsheets to produce digital content for solving various problems of the university world, research and the world of work.

The course includes the study of the Microsoft Excel program, interaction with the teacher and with other students in search of the solution to the problem.

The overall workload foreseen by the course is 30 hours.

At the end of the course, participants will have to produce a complex spreadsheet, showing that they have acquired the skills related to the use of the program's functions in relation to data analysis, also through the study of examples available on the net.

The production of the spreadsheet and its presentation together with the percentage of attendance (which cannot be less than 70% of the entire duration) are the elements on which the assessment of learning is based for the purpose of obtaining the badge.



## Issued by University of Basilicata

The University of Basilicata is the leading University of the Basilicata region, in the Southern part of Italy. Since 2012, according to the new University statute and rules of procedure, ex D.R. n. 88/2012, the University of Basilicata is organized through six primary structures (precisely four departments and two schools) in which the functions and the personnel of the pre-existing twelve departments and eight faculties have been re-addressed. Degree programs range from the Humanities, to architecture, archeology, education, economics and management, as well as to the STEM disciplines (hard sciences, agriculture, engineering, computer sciences). Such degree programs are effectively connected to the research, training and third mission activities developed by the primary structures. University of Basilicata counts about 7000 students, and is based in the cities of Potenza and Matera.



## Badge Numbers



-

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-

*Received this badge*



-

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-

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