



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Culture e società		
ACADEMIC YEAR	2020/2021		
MASTER'S DEGREE (MSC)	COOPERATION, DEVELOPMENT AND MIGRATIONS		
INTEGRATED COURSE	QUANTITATIVE METHODS FOR DEVELOPMENT ANALYSIS		
CODE	20699		
MODULES	Yes		
NUMBER OF MODULES	2		
SCIENTIFIC SECTOR(S)	SECS-S/05		
HEAD PROFESSOR(S)	OLIVERI ANTONINO MARIO	Professore Associato	Univ. di PALERMO
OTHER PROFESSOR(S)	FERRANTE MAURO	Professore Associato	Univ. di PALERMO
	OLIVERI ANTONINO MARIO	Professore Associato	Univ. di PALERMO
CREDITS	9		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	1		
TERM (SEMESTER)	2° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	FERRANTE MAURO Wednesday 10:00 - 12:00 Stanza del docente: edificio 15, sesto piano, stanza 608, oppure su Piattaforma Microsoft Teams. E' preferibile che gli studenti interessati contattino il docente tramite mail qualche giorno prima per essere aggiunti al team del ricevimento. OLIVERI ANTONINO MARIO Tuesday 15:30 - 17:30 Piattaforma Microsoft Teams o incontri in presenza, da concordare via email e se le condizioni sanitarie lo renderanno possibile.		

PREREQUISITES	Students are expected to possess basic knowledge of mathematics, which was gained at high schools. In particular: the concept of logarithm, the Cartesian reference system, and the linear equation.
LEARNING OUTCOMES	1) KNOWLEDGE AND UNDERSTANDING : students are expected to demonstrate knowledge and understanding of statistical methodologies aiming at constructing elementary and composite indicators in the socio-economic field. 2) APPLYING KNOWLEDGE AND UNDERSTANDING : students should be able to apply their knowledge and understanding in new or unfamiliar environments within broader (or multidisciplinary) contexts relating to the field of development, cooperation and migrations. 3) MAKING JUDGEMENTS : students are required to possess the ability of integrating knowledge and handle complexity, as well as the ability of formulating judgements with incomplete or limited information. Students should also possess ability of analysing consequences relating to the application of their knowledge and judgements. 4) COMMUNICATION : students are expected to communicate clearly and unambiguously their conclusions, and the knowledge and rationale underpinning conclusions to specialist and non-specialist audiences. In order to gain this goal students will be solicited to prepare and present documents and short research reports to be discussed during the lectures with classmates and teachers. 5) LIFELONG LEARNING SKILLS : students should possess the learning skills which will allow them to continue their studies autonomously. The development of these skills will follow efforts to analyse the socio-economic situation of countries, by using primary and secondary information and scientific literature.
ASSESSMENT METHODS	Presentation of a project work and oral joint discussion for both modules. The project work will be made by each student as a paper/a short essay, will include data analysis and will be carried out relating to a topic given by the professors or chosen by the student. In the latter case, the topic will be agreed with the professors. The project will be delivered to the professors at least five days before the exam. The oral assessment will ascertain knowledge and skills in the field of study. Questions will be addressed to assess: a) knowledge and understanding, b) cognitive and practical skills, c) ability to communicate, d) making judgements. Marks will be given in thirtieths with possible honours. The project work is 30% of the total mark; the mark given through oral discussion is 70% of the total mark and arises from the CFU-weighted mean of marks in the two modules. Example: student AAA gets the mark 19 at his/her project work, 28 at "Indicatori dello sviluppo" and 22 at "Elementi di statistica applicata". The final mark is: $(19 \times 0.3) + [(28 \times 6 + 22 \times 3) / 9] \times 0.7 = 23.9$, which is rounded up to 24. Assessment scale: 1) 30 - 30 cum laude indicate respectively just some or all of the following features: a) advanced knowledge in the field of study, involving a critical understanding of theories and principles; b) advanced skills, demonstrating mastery and innovation required to solve complex and unpredictable problems in the field of study; c) fully adequate use of specialized language; d) responsibility for completion of tasks. 2) 26-29 indicate just one or more of the following features: a) comprehensive, specialised knowledge within the field of study and awareness of the boundaries of that knowledge; b) comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems; c) comprehensive use of specialized language; d) clear ability of organising study activities. 3) 22 - 25 indicate just one or more of the following features: a) knowledge of facts, principles, processes and general concepts, in the field of study; b) skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information; c) ability of using specialized language; d) ability of taking responsibility for completion of tasks. 4) 18-21 indicate just one or more of the following features: a) basic general knowledge; b) basic skills required to carry out simple tasks; c) basic ability of communicating relevant information; d) basic ability of taking responsibility for completion of tasks. 5) 0-17 indicate just one or more of the following features: a) insufficient general knowledge; b) insufficient skills required to carry out simple tasks; c) insufficient ability of communicating relevant information; d) insufficient ability of taking responsibility for completion of tasks.
TEACHING METHODS	Lectures. Practical exercises, also at IT suite. Analyses of case studies, teamwork. In case of COVID-19 health emergency persistence, lessons will be given at distance.

MODULE DEVELOPMENT INDICATORS

Prof. ANTONINO MARIO OLIVERI

SUGGESTED BIBLIOGRAPHY

1) Nardo M., Saisana M., Saltelli A., Tarantola S., Hoffman A., Giovannini E. (2008) Handbook on Constructing Composite Indicators - Methodology and user guide, Paris: OECD (downloadable from: <https://www.oecd.org/sdd/42495745.pdf>) 2) Conceicao P. et al. (2019) Human Development Report 2019, New York: UNDP (downloadable from: <http://hdr.undp.org/sites/default/files/hdr2019.pdf>; http://hdr.undp.org/sites/default/files/hdr2019_technical_notes.pdf). Ulteriori materiali didattici di sintesi saranno forniti dal docente, in particolare sui temi dell'analisi della qualità della vita e della povertà. Supplementary materials will be provided by the teacher, especially relating to quality of life and poverty.

AMBIT	50603-discipline economiche
INDIVIDUAL STUDY (Hrs)	110
COURSE ACTIVITY (Hrs)	40

EDUCATIONAL OBJECTIVES OF THE MODULE

The aim of this module is to provide students with statistical methodology and technical skills necessary to: a) build elementary and composite indicators in the socio-economic field; b) interpret and properly use main socio-economic indicators reported in the official reports issued by the European Union, international organizations and major non-governmental organizations; c) understand the main composite development indicators from international literature, in the area of cooperation, development, and migration. Teaching methods aim at stimulating both individual and group problem solving and the ability of building and using development indicators. At the end of the course, students are expected to possess the mathematical and statistical ability of combining variables of different nature in order to construct a quantitative measure of the target phenomenon. Students are also expected to know how to operate comparisons between countries and between individuals using composite indicators. Finally, students are expected: a) to acquire discriminating judgment and statistical abilities of selecting the most suitable instrument and data to measure complex concepts; b) to gain skills to read and interpret statistical socio-economic indicators presented by the main international organizations and by scholars involved in the field of cooperation, development and migrations.

SYLLABUS

Hrs	Frontal teaching
2	Indicators as instruments for evaluating complex phenomena and socio-economic development.
2	Types of indicators. The properties of indicators
2	Constructing data: measuring latent variables, selecting variables to measure multidimensional concepts
4	Comparing data: linear and nonlinear transformations (standardization and other transformations)
5	Synthesising indicators: choice of the aggregation function and the weighting scheme
5	The Human Development Index (HDI); modifications and proposals of other measures
4	Measuring Quality of Life
4	Analysing and measuring poverty
Hrs	Practice
3	Constructing composite indicators. Examples and applications
5	Case studies. Use of software
Hrs	Others
4	Project work on constructing a composite indicator

MODULE
PRINCIPLES OF APPLIED STATISTICS

Prof. MAURO FERRANTE

SUGGESTED BIBLIOGRAPHY

A scelta tra:

Borra S., Di Ciaccio, A. . Statistica. Metodologia per le Scienze Economiche e Sociali, 2 Ed., McGraw-Hill, Milano.

Cicchitelli G., D'Urso P., Minozzo M.. Statistica: principi e metodi. Ed. Pearson.

Ulteriore materiale didattico sara' rilasciato dal docente

AMBIT	21029-Attività formative affini o integrative
INDIVIDUAL STUDY (Hrs)	55
COURSE ACTIVITY (Hrs)	20

EDUCATIONAL OBJECTIVES OF THE MODULE

Statistics is a key-element in many aspects of society. The course aims at developing critical capabilities of interpretation of messages and results which are produced and analyzed by international organizations. Moreover, the peculiar emphasis placed on the knowledge of the main techniques for describing and analyzing social phenomena allows for the development of comprehension capabilities of the results as well as competences related with data analysis.

SYLLABUS

Hrs	Frontal teaching
2	Course Introduction. Measurement in social science. General definitions, statistical units, variables and categories. Measurement scales.
2	Introduction to survey methodology. Introduction to Excel
2	From data matrix to frequency distributions through Excel software.
2	Graphical representations in Excel.
2	Measures of central tendency. Mode, median and mean. Excel functions.
3	Variability. Heterogeneity index. Range, Interquartile difference, Standard deviation. Coefficient of Variability. Applications in Excel.
1	Symmetrical and asymmetrical distributions. The box-plot.
1	Statistical ratios
5	Introduction to relationships among variables. Spearman rank correlation and Kendall multiple ranks coefficient; Correlation coefficient; Linear regression model. Applications in Excel