



UNIVERSITÀ DEGLI STUDI DI PALERMO

Department: Economics and statistical Sciences

A.Y. 2018/2019

DEGREE COURSE IN STATISTICS

- STATISTICAL SCIENCE -

Educational objectives

Specific objectives:

The Master's Degree in Statistical Sciences, consistent with the requirements of the class educational objectives and with the indications coming from the surveys on the employment market of graduates in statistical disciplines (such as, for example, the AlmaLaurea interuniversity initiative), aims at training graduates who, with a solid background in mathematics, probability and statistics, are able to operate in various fields of application with autonomy and responsibility and to enter the labor market as qualified experts, able to produce, manage and analyze diversified information flows.

The Degree Course provides the tools to obtain a solid statistical methodological preparation together with tools which are typical of specific application contexts. The frontal teaching activity is characterized by the strong integration between theoretical lessons and exercises and laboratories, and is addressed to the formation of two strongly defined professional figures: the first one with respect to statistical methods for biostatistics, and the second one to quantitative methods of risk management.

In addition, the agreement with the University of Minho (Portugal) was activated for the attainment of a double degree.

The educational programme, is characterized by:

- the presence of a package of common advanced courses of mathematical, probabilistic and statistical subjects, providing students the deepening and acquisition of useful knowledge for the subsequent methodological and applicative expansions of the statistics;

- a high degree of personalization of the Study Plan (about 40 credits) by the student, to whom two specializations regarding the biostatistics field and the financial field are strongly recommended;

- attention to teaching methodologies, where a solid theoretical training, based on lectures, is integrated with laboratories, in which cases and real problems will be discussed and issues of applicative relevance in which the Statistics is an indispensable tool of analysis will be investigated. In this way, the course facilitates the development of an adequate critical capacity in students who, starting from a solid methodological basis, leads them to maintain constant attention also to the process of data formation - in the conceptual aspects of definition and measurement - and a critical use of theories and methods, in relation to the nature and meaning of the available data, transforming them into information and therefore into knowledge that can be used for decision-making purposes. Laboratory activities must also contribute to developing communication skills, through the preparation and presentation of written and/or oral reports; a particular attention to linguistic ability, in two directions: a) deepening of English for specific purposes (ESP), with a specialized approach compared to the generalist one of the first level; b) deepening of the spoken language with the introduction of a period (one week) of lessons, per semester, carried out in English, during which the teacher encourages students to dialogue in English on the topics illustrated; In addition, some of the elective subject, chosen within other courses of the University, are entirely carried out in English. In addition, there is the possibility of spending a period of internship in companies or private and public organizations (3 credits), and the possibility of allocating up to 3 credits to activities (other useful knowledge for entering the labour market) in which a real statistical consultation is "mimed", under the supervision of the teachers of the Course. The objective is to provide students with the advanced knowledge and skills, including soft as well as professional ones, for conducting a statistical consultancy. This experience is not only a useful showcase for companies, but also an added value for graduates who face the labour market, because they have had the opportunity to directly experience their relational and professional skills with future clients/users;

- the possibility, from year to year, to provide for small measures, such as inclusion of courses or profiles responsive to the labour market, favoring the employment opportunities of graduates;

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- The possibility of obtaining the title of Mestre em Estatística, issued by the Universidade do Minho (Portugal), following the attendance, and passing the related examinations, of a teaching package held by the same structure.

Professional opportunities

Profile:

statistician/support to credit risk assessments

Functions:

Analysis of data and support for risk management activities in the financial and credit area.

Skills:

design and implementation of assessment activities for quality management and for the assessment of bank performance; certification of statistical methodologies and techniques applied to surveys; analysis of data and formalization of mathematical/statistical models to investigate phenomena and to make predictions in the various application areas with particular reference to risk management; design, creation and management of databases for statistical analysis of the risk connected to internal and external aspects of the financial and credit system.

Professional opportunities:

in public administrations;

in the research offices of companies operating in the economic, financial and insurance fields

in statistical offices of medium-large enterprises,

in marketing offices of production and distribution companies,

in information systems management companies;

in statistical consultancy providing external support activities for private and public companies;

in public and private research centers and institutes.

Profile:

biostatistician

Functions:

Data analysis and support in clinical, epidemiological and biological research.

Skills:

Design of complex statistical surveys related to the specific fields of specialization; design, analysis and verification of the results of controlled clinical experiments and trials; design and implementation of evaluation activities aimed at quality management and performance measurement; knowledge and application of statistical methodologies and techniques in relation to the type of data and research objectives; data analysis and formalization of mathematical/statistical models to investigate the phenomena and to make predictions in the biological, health and epidemiological fields; design and creation, for the part of statistical competence, of databases for statistical analysis purposes.

opportunities:

In healthcare companies, both in the clinical sector and in the epidemiological and management sectors.

In the health departments in the evaluation and epidemiology areas.

In design and testing branches of companies operating in the biomedical, epidemiological, biological sectors; in public and private research centers and institutes

Final examination features

To obtain the degree, students must have acquired 120 credits, including the ones attributed to the final examination, which are at least 18. The final written original dissertation has de objective to demonstrate the level of maturity and critical skills of candidates, with respect to the acquired knowledge and skills, at the conclusion of the activities envisaged by the educational programme.

Subjects 1 ° year	CFU	Per	V\W	SSD	TAF
18165 - EXPLORATORY METHODS FOR BIG DATA <i>Plaia(PO)</i>	9	1	V \ 1	SECS-S/01	B
15511 - SAMPLING PLANS FOR SOCIAL SCIENCES <i>Giambalvo(PO)</i>	9	1	V \ 1	SECS-S/05	B
07979 - STATISTICAL MODELS <i>Lovison(PO)</i>	9	1	V \ 1	SECS-S/01	B
16439 - STOCHASTIC PROCESSES <i>Adelfio(PA)</i>	6	1	V \ 1	SECS-S/01	B
15510 - ENGLISH FOR SPECIFIC PURPOSES <i>Romeo(PA)</i>	6	1	V \ 0		F
19643 - NUMERICAL ANALYSIS AND OPTIMIZATION - INTEGRATED COURSE	6	2	V \ 1		

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Subjects 1 ° year	CFU	Per	V\W	SSD	TAF
- NUMERICAL ANALYSIS <i>Tumminello(PA)</i>	3	2		SECS-S/06	B
- OPTIMIZATION <i>Consiglio(PO)</i>	3	2		SECS-S/06	B
18178 - STATISTICS FOR ECONOMIC AND BUSINESS ANALYSIS <i>Cracolici(PO)</i>	6	2	V \ 1	SECS-S/03	B
Optional subjects	9				B
Free subjects	9				D
	69				

Subjects 2 ° year	CFU	Per	V\W	SSD	TAF
13351 - COMPETENCES RELATED TO THE LABOUR MARKET	3	1	G \ 0		F
05917 - FINAL EXAMINATION	18	2	G \ 0		E
Optional subjects II	18				C
Optional subjects III	12				C
	51				

OPTIONAL SUBJECTS

Optional subjects	CFU	Per	V\W	SSD	TAF
19944 - BIOSTATISTICS <i>Attanasio(PO)</i>	9	2	V \ 1	SECS-S/05	B
19640 - STATISTICAL METHODS FOR ECONOMICS AND FINANCIAL MARKETS WITH LABORATORY <i>Vassallo(PA)</i>	9	1	V \ 1	SECS-S/03	B
Optional subjects II	CFU	Per	V\W	SSD	TAF
19635 - ADVANCED STATISTICAL METHODS - INTEGRATED COURSE	9	Ann.	V \ 1		
- BAYESIAN STATISTICS <i>Abbruzzo(RD)</i>	3	1	V \ 1	SECS-S/01	C
- NON PARAMETRIC STATISTIAL METHODS <i>Chiodi(PO)</i>	6	1	V \ 1	SECS-S/01	C
19633 - CATEGORICAL DATA - INTEGRATED COURSE	9	1	V \ 1		
- PROBABILISTIC NETWORKS <i>Abbruzzo(RD)</i>	3	1	V \ 1	SECS-S/01	C
- CATEGORICAL DATA <i>Sciandra(PA)</i>	6	1	V \ 1	SECS-S/01	C
18811 - ECONOMETRICS - INTEGRATED COURSE	12	2	V \ 1		
- TOPICS IN MACRO AND FINANCIAL ECONOMETRICS <i>Cipollini(PA)</i>	6	2	V \ 1	SECS-P/05	C
- ECONOMETRICS <i>Lo Cascio(PA)</i>	6	2	V \ 1	SECS-P/05	C
19638 - MATHEMATICAL MODELS FOR RISK MANAGEMENT - INTEGRATED COURSE	9	1	V \ 1		
- MATHEMATICAL MODELS FOR RISK MANAGEMENT - LABORATORY <i>Consiglio(PO)</i>	3	1	V \ 1	SECS-S/06	C
- MATHEMATICAL MODELS FOR RISK MANAGEMENT <i>Consiglio(PO)</i>	6	1	V \ 1	SECS-S/06	C
15506 - RISK MANAGEMENT <i>Scannella(PO)</i>	6	1	V \ 1	SECS-P/11	C
19837 - STATISTICAL EVALUATION AND ECONOMICS IN HEALTHCARE - INTEGRATED COURSE	9	Ann.	V \ 1		
- EXPERIMENTAL PLANS AND CLINICAL TRIALS <i>Enea(RD)</i>	3	1	V \ 1	SECS-S/05	C

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OPTIONAL SUBJECTS

Optional subjects II	CFU	Per	V\W	SSD	TAF
- STATISTICAL EVALUATION METHODS IN HEALTHCARE <i>Vassallo(PA)</i>	6	1	V \ 1	SECS-S/03	C
Optional subjects III	CFU	Per	V\W	SSD	TAF
19272 - ARTIFICIAL INTELLIGENCE AND DEEP LEARNING <i>Lo Bosco(PA)</i>	6	2	V \ 1	INF/01	C
18103 - BIG DATA & ANALYTICS <i>Andolina(RD)</i>	6	2	V \ 1	INF/01	C
18411 - BIOIMAGING <i>Galia(PA)</i>	6	1	V \ 1	MED/36	C
19354 - BIOMEDICAL DATA AND SIGNAL PROCESSING <i>Pernice(RD)</i>	6	2	V \ 1	ING-INF/ 06	C
01597 - CELL BIOLOGY <i>Santulli(RU)</i>	6	2	V \ 1	BIO/06	C
18125 - DATA AND MODELS FOR MANAGEMENT DECISIONS <i>Dardanoni(PO)</i>	6	2	V \ 1	SECS-P/03	C
15833 - DIGITAL IMAGE ANALYSIS <i>Valenti(PA)</i>	6	1	V \ 1	INF/01	C
01662 - ENVIRONMENTAL BIOMONITORING <i>Naselli Flores(PA)</i>	6	2	V \ 1	BIO/03	C
18128 - FINANCIAL PLANNING AND CONTROL <i>Quarchioni(PC)</i>	6	2	V \ 1	SECS-P/07	C
06502 - MANAGEMENT INFORMATION SYSTEMS <i>Gambino(RU)</i>	6	1	V \ 1	ING-INF/ 05	C
13834 - MARINE ECOLOGY <i>Vizzini(PO)</i>	6	1	V \ 1	BIO/07	C
06263 - OPERATIONS RESEARCH <i>Bauso(PA)</i>	6	2	V \ 1	MAT/09	C
18119 - SCENARIO ANALYSIS FOR FINANCE <i>Cipollini(PA)</i>	6	2	V \ 1	SECS-P/05	C
06318 - SCIENCE OF FINANCE <i>Berritella(PA)</i>	6	1	V \ 1	SECS-P/03	C

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