

**COURSE DATA****Data Subject**

|                      |                     |
|----------------------|---------------------|
| <b>Code</b>          | 40111               |
| <b>Name</b>          | Advanced statistics |
| <b>Cycle</b>         | Master's degree     |
| <b>ECTS Credits</b>  | 5.0                 |
| <b>Academic year</b> | 2021 - 2022         |

**Study (s)**

| <b>Degree</b>                                | <b>Center</b>        | <b>Acad. year</b> | <b>Period</b> |
|----------------------------------------------|----------------------|-------------------|---------------|
| 2114 - M.D. in Marketing and Market Research | Faculty of Economics | 1                 | Second term   |

**Subject-matter**

| <b>Degree</b>                                | <b>Subject-matter</b>            | <b>Character</b> |
|----------------------------------------------|----------------------------------|------------------|
| 2114 - M.D. in Marketing and Market Research | 3 - Specialty in market research | Optional         |

**Coordination**

| <b>Name</b>       | <b>Department</b>       |
|-------------------|-------------------------|
| RUIZ PONCE, FELIX | 110 - Applied Economics |

**SUMMARY**

The subject Advanced Statistics will develop the statistical techniques related to the study of Markets, being taught first basic knowledge about sampling and going to make an introduction to the use of the statistical package SPSS. Thus, making use of said software will be solved, in a first contact with the aforementioned program, the contrasts of the most used hypotheses.

Secondly, the concepts, methodology, development and application of some Multivariate Analysis techniques will be deepened. Third, or simultaneously, these techniques will be applied to cases and examples, affecting the interpretation of their results, as well as the outputs that the SPSS provides, so that the applicability of the same is evident.

In any case, the fact that all the developed concepts can be useful in situations that involve decision-making based on certain information will be underlined.

The objective of the subject is to provide a set of statistical tools related to the study of Markets.



## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

### Other requirements

No enrolment restrictions have been specified with other subjects of the curriculum.

In relation to other subjects of the same degree, no enrolment restrictions have been specified with other subjects of the curriculum. The previous knowledge is that of access to the Master. This subject together with those of "Causal Research Designs", "Advanced Statistics" and "Commercial Research Techniques" make up the specialty in Market Research.

## OUTCOMES

### 2114 - M.D. in Marketing and Market Research

- Saber aplicar los conocimientos adquiridos y ser capaces de resolver problemas en entornos nuevos o poco conocidos dentro de contextos más amplios (o multidisciplinares) relacionados con su área de estudio.
- Poseer las habilidades de aprendizaje que les permitan continuar estudiando de un modo que habrá de ser en gran medida autodirigido o autónomo.
- Saber comunicar sus conclusiones y los conocimientos y razones últimas que las sustentan a públicos especializados y no especializados de un modo claro y sin ambigüedades.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Ser capaces de buscar, ordenar, analizar y sintetizar la información, seleccionando aquella que resulta pertinente para la toma de decisiones.
- Ser capaces de tomar decisiones tanto individuales como colectivas en su labor profesional y/o investigadora.
- Be able to integrate new technologies in their professional and/or research work.
- Know how to write and prepare presentations to present and defend them later.
- Ser capaces de analizar de forma crítica tanto su trabajo como el de su compañeros.
- Ser capaces de seleccionar y desarrollar en su defecto herramientas de análisis del mercado.
- Escoger la técnica de investigación de mercados adecuada al problema planteado.
- Redactar documentos e informes en marketing e investigación comercial.
- Presentar documentos e informes en marketing e investigación comercial.



- Saber realizar las labores propias de su profesión, tanto en empresas privadas como en organismos públicos.

## LEARNING OUTCOMES

- 1.- Select and correctly use different sources of information in both traditional and electronic formats.
- 2.- Handle and correctly interpret quantitative and qualitative data to convert them into useful information for decision making in communication.
- 3.- Prepare documents and reports presented in a written text in a comprehensible organized, documented and illustrated way.
- 4.- Argue and counter-argue.
- 5.- Select and use the quantitative techniques appropriately.
- 6.- Use the technical vocabulary of the subject

## DESCRIPTION OF CONTENTS

### 1. Part I

#### Topic 1 Sampling and introduction to SPSS

The first part of the program is devoted to the development of the concepts of sampling and to deepen in the knowledge by the student of the SPSS statistical package

### 2. Part II

#### Topic 2: Principal Components Analysis

#### Topic 3: Cluster Analysis

#### Topic 4: Discriminant Analysis

In this second part, several multivariate analysis techniques and their application to Market Research will be explained. Among the techniques to be developed, the Principal Components Analysis, the Cluster Analysis and the Discriminant Analysis should be highlighted

**WORKLOAD**

| ACTIVITY                                     | Hours         | % To be attended |
|----------------------------------------------|---------------|------------------|
| Theoretical and practical classes            | 35,00         | 100              |
| Theory classes                               | 0,00          | 100              |
| Attendance at events and external activities | 5,00          | 0                |
| Readings supplementary material              | 6,00          | 0                |
| Preparation of evaluation activities         | 20,00         | 0                |
| Preparing lectures                           | 21,50         | 0                |
| Preparation of practical classes and problem | 37,50         | 0                |
| <b>TOTAL</b>                                 | <b>125,00</b> |                  |

**TEACHING METHODOLOGY**

Theoretical classes participatory master class  
Resolution of practical cases  
Problems  
Discussion or directed discussion

The proposed methodology can be developed both in person and remotely if the circumstances require it.

**EVALUATION**

Final exam (10%)  
Assistance and participation (10%)  
Delivery of practices (80%)

If necessary, the weight of academic assignments may be increased, to adjust to possible teaching situations until reaching 100% of the grade.

**REFERENCES****Basic**

- Pérez López, C. (2013). IBM SPSS. Estadística Aplicada. Conceptos y ejercicios resueltos. Garceta grupo editorial. Masdrid.
- Pérez López, C. (2005). Métodos estadísticos avanzados con SPSS. Thompson. Madrid.



- Uriel Jiménez, E.; Aldás Manzano, J. (2005). Análisis multivariante aplicado: aplicaciones al marketing, investigación de mercados, economía, dirección de empresas y turismo. Thomson, D.L. Madrid.
- Mateos-Aparicio Morales, G.; Hernández Estrada, A. (2021). Análisis multivariante de datos. Cómo buscar patrones de comportamiento en BIG DATA. Ediciones Pirámide. Madrid

#### **Additional**

- Pérez López, C. (2013). Análisis Multivariante de Datos. Aplicaciones con IBM SPP, SAS y STATGRAPHICS. Garceta grupo editorial. Madrid.
- Casas Sánchez, J.M. (1996): Inferencia estadística para Economía y Administración de Empresas. Centro de Estudios Ramón Areces. Madrid.
- Ferrán Aranaz, Magdalena (1999). SPSS para Windows: programación y análisis estadístico. McGraw-Hill. Madrid.
- Hair, J.F.; Anderson, R.; Tatham, R.L.; Black, W.C. (1999) Análisis Multivariante. Prentice Hall. Madrid.
- Pérez López, C. (2005). Técnicas estadísticas con SPSS 12: aplicaciones al análisis de datos. Pearson Educación, Madrid.
- Visauta Vinacua, B. (2007). Análisis Estadístico con SPSS 14: estadística básica. McGraw-Hill. Madrid.
- Hair, Jr.J.; Ortinau, D.J.; Harrison, D.E. (2021). Principios de investigación de mercados. Mc.Graw Hill. Ciudad de México.

#### **ADDENDUM COVID-19**

**This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council**

The teaching of the 2020-2021 academic year to which this Teaching Guide refers is scheduled in face-to-face mode.

If at any time, during the course, for justified and supervening reasons it could not be carried out as planned, the responsible teaching staff will communicate more specific and detailed information about the changes that should be made through the Virtual Classroom of the subject.

Given the possibility of quarantine of some students or confinement of the population, the possibility of teaching distance learning by synchronous methods is contemplated, allowing the full development of the program. The appropriate measures will be taken if necessary, to facilitate access to the training sessions of any student who has to observe quarantine unexpectedly throughout the course.