



## Course guide

# 200624 - IS - Social Indicators

Last modified: 01/06/2021

**Unit in charge:** School of Mathematics and Statistics  
**Teaching unit:** 1004 - UB - (ENG)Universitat de Barcelona.

**Degree:** Academic year: 2021    **ECTS Credits:** 5.0  
**Languages:** Catalan, Spanish

### LECTURER

**Coordinating lecturer:**

**Others:**

### PRIOR SKILLS

- A minimal familiarity with the official or public statistics.
- Basic abilities in descriptive and statistical inference.
- Knowledge of statistical sampling and main statistical information sources
- Basic knowledge of macroeconomics, business economics, sociology and demography.
- Basic knowledge of R and Excel.

### REQUIREMENTS

In terms of the thematic content, focused on the socio-demographic and economic indicators usually generated by national statistical offices, it is recommended to have a minimum knowledge of the usual statistical information on demographics, social conditions, and macroeconomics related to a country. Also, as the institutional environment is practically reduced to governments that generate official statistics, it is desirable to have a minimal familiarity with the public legal aspects or principles, and with governmental practices.

With regard to instrumental aspects, the optimal monitoring of the course requires a basic knowledge of the standard procedures of descriptive statistics and inferential statistical concepts, which are at the basis of most of the demographic and economic indicators. It is also recommended some practical experience in dealing with current data on individual characteristics and the interpretation of tabulated data or aggregate statistical information (such as composite or synthetic indicators).

### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

#### Specific:

5. CE-1. Ability to design and manage the collection of information and coding, handling, storing and processing it.
6. CE-2. Ability to master the proper terminology in a field that is necessary to apply statistical or operations research models and methods to solve real problems.
7. CE-8. Ability to discuss the validity, scope and relevance of these solutions and be able to present and defend their conclusions.

#### Transversal:

1. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.
4. TEAMWORK: Being able to work in an interdisciplinary team, whether as a member or as a leader, with the aim of contributing to projects pragmatically and responsibly and making commitments in view of the resources that are available.
3. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.



## TEACHING METHODOLOGY

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Throughout the course, theoretical sessions will alternate, where the teacher performs master classes, with others where the active participation of the student is very important, such as flipped learning, where the student research a topic and then shares the knowledge with the rest of the companions

On the other hand, there will be sessions dedicated to group practice. Sessions where students work in groups investigating a topic of their interest with the guidance of the teacher. In these classes the student's own knowledge of R and Excel will be applied. Depending on the knowledge of the students, the teacher will provide the appropriate resources to achieve the objectives

The Internet will play a role as a support of statistical sources, both for the availability of learning resources and for the way of accessing the published information

## LEARNING OBJECTIVES OF THE SUBJECT

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Social, economical and demographic indicators of a specific space are very close to official or public statistics as a general framework of legitimisation. In this sense, official statistics was born out of the necessity to provide regulated and harmonized statistical information regarding the demographic, social and economic environments of national realities. Knowledge of the functional mechanisms and coordination of its modes of production along with the diffusion of outcomes are of special interest for statisticians in this context, as well as for users of official statistics who require a measurement of meta-information regarding the quality and limitations of the data they need to use.

On the other hand, the development of official statistics has often posed methodological and organizational challenges toward the application of statistical methods, for which it has been necessary to try out new techniques and specific procedures for a resolution. At the same time, some methodologies born of this process have been subsequently generalized in other fields of quantitative research in the social sciences, such as non-response, small area estimation, statistical matching or statistical disclosure control.

In this context, the course attempts to familiarize the student with the legal and institutional environment of public statistics, the principle processes in the production and dissemination of statistical outcomes and, finally, the sources of demographic, social and economic statistics that are currently available from the state and autonomous regions. Consequently, the course considers separately and sequentially these three fields, with special attention applied to the organizational elements and characteristic methodologies of the statistical agencies in Europe, and focused on the Catalan and the Spanish statistical systems.

More specifically, the goals of the course differentiate between four distinct spheres of learning:

- 1) Knowledge of the working programs, resources and constraints in which official statistics operates, especially in Catalonia, Spain and Europe.
- 2) Contextualise the processes of statistical operations design, the development of technical projects and joint meta-information associated.
- 3) Familiarization with some methods for processing data or in estimating statistical outcomes produced by official statistics.
- 4) Know how to identify, locate and assess the availability of official statistical information, preferably in the form of indicators in the field of demographics, social conditions of a population and regarding economic structures.

## STUDY LOAD

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Type	Hours	Percentage
Self study	80,0	64.00
Hours large group	30,0	24.00
Hours small group	15,0	12.00

**Total learning time:** 125 h



## CONTENTS

### Block 1. Institutional and legal environment of official statistics

#### Description:

1. Official or public statistics: general aspects and principal concepts. The legal and institutional framework of the Catalan, Spanish and European Statistical Systems. Relationship(s) among statistical systems. Good practice codes and other organizational recommendations.
2. The Catalan and Spanish statistical systems; Idescat and INE coordination roles. Statistical plans and statistical annual work programs. The European statistical planning.
3. Protection of personal data and statistical confidentiality. Information and privacy rights: statistical secret and close figures. Methods and criteria regarding statistical disclosure control. The role of regulatory bodies.

**Full-or-part-time:** 41h 40m

Theory classes: 10h

Laboratory classes: 5h

Guided activities: 8h 20m

Self study : 18h 20m

### Block 2. Processes for the production of statistical information

#### Description:

4. The social knowledge through official statistics. Statistical production modes. Diversity and complementarity of official statistics information sources. Current challenges of the European and Western statistics (datafication and big data).
5. The conceptual framework and instruments for statistical standardization: codes, classifications and statistical nomenclatures. Geo-nomenclatures, metadata systems and metainformation of statistical processes.
6. Methodology of statistical operations: the technical project associated to official activities. Relevant aspects in the design of questionnaires and sampling plans. Methods for gathering information and operational control. Procedures for data editing, imputation and weighting.

**Full-or-part-time:** 41h 40m

Theory classes: 10h

Laboratory classes: 5h

Self study : 26h 40m

### Block 3. Statistical sources and social indicators systems

#### Description:

7. Demographical statistics: statistics on population and household structures, population flow, and demographic projections. Social statistics on economic and labor conditions, and vital statistics of the population. Economic statistics on conjuncture, macromagnitudes, and structure of the productive sectors.
8. Statistical sources and sectoral indicators on education, health, social services, social protection, and safety-justice. Overview of the Catalan, Spanish, European and international statistics.
9. Socio-economic indicators in urban areas. Indicators of social progress and welfare. Supranational statistical indicators: indicators system of the European Union (Eurostat) and social indicators of OECD and of Statistical Division of United Nations

**Full-or-part-time:** 41h 40m

Theory classes: 10h

Laboratory classes: 5h

Self study : 26h 40m



## GRADING SYSTEM

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Two alternative evaluation systems are defined, at the student's choice:

- (A) Continuous evaluation, the recommended option. It is the recommended option and consists of three main activities:
- (1) Team assignment [Weight: 65%]. Investigation of an aspect of social interest of interest to the student, where the data of the Institutes of Official Statistics (Idescat, INE, Eurostat, ...) are investigated and used to know the situation and make new proposals for indicators. If it is necessary, the design of a questionnaire will be designed to carry out a new data collection and obtain new conclusions by analyzing the data.
  - (2) Tests [Weight: 25%]. Throughout the course, different multiple choice questionnaires will be carried out in order to check the achievement of the subject by the students.
  - (3) Participation [Weight: 10%]. Proactivity, comments on classmates' work.
- If the total marks do not achieve 5 points (out of 10), the student must take the single evaluation.

- (B) Single evaluation. This option is recommended for students unable to regularly attend classes.  
A written exam to be carried out on the date fixed before enrolment.

## EXAMINATION RULES.

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Continuous evaluation requires the delivery of all the assignments.

## BIBLIOGRAPHY

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### Basic:

- Eurostat. Towards a harmonised methodology for statistical indicators. Part 1: Indicators typologies and terminologies [on line]. Luxemburg: European Union, 2014 [Consultation: 12/05/2020]. Available on: <http://ec.europa.eu/eurostat/documents/3859598/5937481/KS-GQ-14-011-EN.PDF/82855e3b-bb6e-498a-a177-07e7884e9bcb?version=1.0>. ISBN 978-92-79-40322-4.
- Stiglitz, Joseph; Sen, Amartya; Fitoussi, Jean-Paul. Report by the Stiglitz Commission on the Measurement of Economic Performance and Social Progress [on line]. Paris: European Union, 2009 Available on: [http://www.stiglitz-sen-fitoussi.fr/documents/rapport\\_anglais.pdf](http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf).
- División Estadística del Departamento de Asuntos Económicos y Sociales de la ONU. Manual de organización estadística: el funcionamiento y la organización de una oficina estadística [on line]. Tercera, serie F, num 88.. New York: Naciones Unidas, 2004 [Consultation: 22/11/2012]. Available on: <http://www.eclac.cl/cgi-bin/getProd.asp?xml=/publicaciones/xml/7/15497/P15497.xml&xsl=/deype/tpl/p9f.xsl&base=/tpl-i/top-bottom.xslt>.
- Eurostat. European Social Statistics. 2013 edition [on line]. Luxemburg: European Union, 2013 [Consultation: 12/05/2020]. Available on: [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-FP-13-001/EN/KS-FP-13-001-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-FP-13-001/EN/KS-FP-13-001-EN.PDF). ISBN 978-92-79-27034-5.
- Cea d'Ancona, M. A. Metodología cuantitativa : estrategias y técnicas de investigación social. Madrid: Sintesis, 1996. ISBN 8477384207.
- Wallgren, A.; Wallgren, B. Registered-based statistics: Administrative data for official purposes. Chichester: John Wiley & Sons, 2007.

### Complementary:

- Villán, I.; Bravo, M.S. Procedimientos de depuración de datos estadísticos. Seminario Internacional de Estadística. Eustat, 1990.
- Costa, A. "Diversitat i complementariedad de les fonts estadístiques". Qüestiió, vol. 24, núm 1 [on line]. [Consultation: 22/11/2012]. Available on: <http://upcommons.upc.edu/revistes/handle/2099/4126>.- De Leeuw, E; Hox, J.J.; Dillman, D.A. International handbook of survey methodology. New York: Lawrence Erlbaum Associates, 2008.
- D'Orazio, M.; Di Zio, M.; Scanu, M. Statistical matching: theory and practice. Wiley Series in Survey Methodology. John Wiley & Sons, 2006.
- Giner, S. (dir.). La societat catalana. Barcelona: Institut d'Estadística de Catalunya, 1998. ISBN 8439344961.
- Jordà, D.; Muñoz, J. "Fonts estadístiques macroeconòmiques de l'economia catalana". Revista econòmica de Catalunya, núm. 25.
- Oliveres, J. (dir.). Planificació i coordinació de l'estadística catalana. Barcelona: Institut d'Estadística de Catalunya, 2000. ISBN 8439352018.
- Eurostat. ESS handbook for quality reports. 2014 Edition. Eurostat Manuals and guidelines [on line]. Luxemburg: European Union, 2015 [Consultation: 12/05/2020]. Available on: <http://ec.europa.eu/eurostat/documents/3859598/6651706/KS-GQ-15-003-EN-N.pdf/18dd4bf0-8de6-4f3f-9adb-fab92db1a568>. ISBN



978-92-79-45487-5.

- Eurostat. Statistical matching: a model based approach for data integration [on line]. Luxemburg: European Union, 2013 [Consultation : 12/05/2020]. Available on : <http://ec.europa.eu/eurostat/documents/3888793/5855821/KS-RA-13-020-EN.PDF/477dd541-92ee-4259-95d4-1c42fcf2ef34?version=1.0>. ISBN 978-92-79-30355-5.

## RESOURCES

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### Hyperlink:

- Institut d'Estadística de Catalunya. <http://www.idescat.cat>- Instituto Nacional de Estadística. <http://www.ine.es>- "Índice. Revista de Estadística y Sociedad". <http://www.revistaindice.com>- Eurostat (oficina estadística Unió Europea). <http://ec.europa.eu/eurostat/web/main/home>- OCDE. <http://www.oecd.org/>- Divisió Estadística de Nacions Unides. <http://unstats.un.org/unsd/default.htm>
- UNESCO Institute for Statistics. <http://www.uis.unesco.org/Pages/default.aspx>

### Other resources:

Legal regulations and recommendations

Ley 23/1998, de 30 de diciembre, de estadística de Cataluña. DOGC núm. 2801 de 8 de enero de 1999

Ley 13/2010, del 21 de mayo, del Plan estadístico de Cataluña 2011-2014. DOGC núm. 5638 de 28 de mayo de 2010

Decreto 165/2014, de 23 de diciembre, por el cual se aprueba el Programa anual de actuación estadística para el año 2015. DOGC núm. 6779 de 30 de diciembre de 2014

Ley 12/1989, de 9 de mayo, de la Función Estadística Pública. BOE núm. 112 de 11 de mayo de 1989

Real Decreto 1658/2012, de 7 de desembre, por el qual se aprueba el Plan Estadístico Nacional 2013-2016. BOE núm. 295 de 8 de diciembre de 2012

Recomendación de la Comisión Europea, de 25 de mayo de 2005, sobre la independencia y responsabilidad de las autoridades estadísticas nacionales y comunitarias.

Reglamento 223/2009 CE del Parlamento Europeo y del Consejo, de 11 de marzo del 2009, relativo a la estadística europea

Reglamento (UE) 2015/759 del Parlamento Europeo y del Consejo, de 29 de abril de 2015, por el que se modifica el Reglamento (CE) no 223/2009, relativo a la estadística europea

Reglamento 99/2013 del Parlamento Europeo y del Consejo, de 15 de enero de 2013, relativo al Programa Estadístico Europeo 2013-2017

Recomendación de la Comisión, de 23 de junio de 2009, sobre los metadatos de referencia para el Sistema Estadístico Europeo

Reglamento 557/2013 CE, de 17 de junio de 2013, por el que se aplica el Reglamento CE 223/2009 del Parlamento Europeo y del Consejo, relativo a la estadística europea, en lo que respecta al acceso a datos confidenciales con fines científicos

Commission Recommendation of 25 May 2005 on the Independence, Integrity and Accountability of National and Community Statistical Authorities (the good practice code of European statistics). Revised edition by the European Statistical System Committee (ESSC)

at 28 of September of 2011. Available at: <http://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-32-11-955> /> International Statistical Institute (ISI): ISI Declaration on Professional Ethics. Qüestiió, Vol. 17, Num. 3. Institut d'Estadística de Catalunya, 1993