

Teaching guide

IDENTIFICATION DETAILS

Degree:			
Faculty/School:	Law, Business and Government		
Course:	BASE PROGRAMMING USING SAS		
Type:	Compulsory Internal	ECTS credits:	6
Year:	2	Code:	45812
Teaching period:	Fourth semester		
Teaching type:	Classroom-based		
Language:	Inglés		
Total number of student study hours:	150		

Teaching staff	E-mail
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SUBJECT DESCRIPTION

The SAS Programming learning includes everything that you need to master foundation SAS programming and data analytics skills. It also covers building tabular reports, generating high-quality graphics, and performing basic statistical analysis.

GOAL

Learn how to:

It defines the basics of data literacy, including common terminology and using data in meaningful ways. Understand the fundamentals of the SAS programming language.

Develop SAS code in various SAS programming interfaces, including SAS Studio, SAS Enterprise Guide, and the SAS windowing environment.

Manipulate and transform data and combine data sets.

Access different types of data (SAS, Microsoft Excel, or text), and explore and prepare the data.

Create basic detail and summary reports.

Manipulate and transform data.

Analyze and report on data and export results to common formats (HTML, PDF, Excel).

Identify and correct syntax and programming logic errors.

Create summary tabular reports with the REPORT procedure and the TABULATE procedure.

Generate high-quality graphs, charts, and maps with SAS ODS Graphics and SAS/GRAPH.

Customize reports and export results using the SAS Output Delivery System.

PRIOR KNOWLEDGE

Before taking the course, you should have experience using computer software. Specifically, you should understand file structures and system commands on your operating systems and be able to access data files on those systems. No prior SAS experience is needed.

COURSE SYLLABUS

SAS Programming: Getting Started

This journey will help you get started developing code in SAS. This collection of free learning assets provides a tour of what is possible with programming in either SAS 9 or SAS Viya.

SAS Programming 1: Essentials

This module is for users who want to learn how to write SAS programs to access, explore, prepare, and analyze data. It is the entry point to learning SAS programming for data science, machine learning, and artificial intelligence.

SAS Programming 2: Data Manipulation Techniques

This module is for those who need to learn data manipulation techniques using the SAS DATA step and procedures to access, transform, and summarize data. The module builds on the concepts that are presented in the SAS Programming 1: Essentials.

EDUCATION ACTIVITIES

On-site activities:

Lectures.

Problem-Based Learning (PBL).

Completion of exercises and activities, both individually and in teams.

Reading and discussion of data analytics topics.

Assessment.

Off-site activities:

Teamwork.
Completion of exercises and assignments proposed by the instructor.
Theoretical and practical study.
Simulations.

DISTRIBUTION OF WORK TIME

TEACHER-LED TRAINING ACTIVITIES	INDIVIDUAL WORK
60 Horas	90 Horas

SKILLS

Students will learn everything they need to master foundational SAS programming and data analytics skills. The course also covers building tabular reports, generating high-quality graphics, and performing basic statistical analysis.

SPECIFIC LEARNING RESULTS

It defines the basics of data literacy, including common terminology and using data in meaningful ways.

Understand the fundamentals of the SAS programming language.

Develop SAS code in various SAS programming interfaces, including SAS Studio, SAS Enterprise Guide, and the SAS windowing environment.

Manipulate and transform data and combine data sets.

Access different types of data (SAS, Microsoft Excel, or text), and explore and prepare the data.

Create basic detail and summary reports.

Analyze and report on data and export results to common formats (HTML, PDF, Excel) .

Identify and correct syntax and programming logic errors.

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LEARNING APPRAISAL SYSTEM

The evaluation system for the course is continuous assessment.

WEIGHTING OF CONTINUOUS ASSESSMENT:

Final exam: 50%.

Midterm tests and practice activities: 50%.

STUDENTS WITH ACADEMIC WAIVERS AND UFV STUDENTS ON INTERNATIONAL EXCHANGE PROGRAMS:

Final exam: 50%.

Midterm tests and practice activities: 50%.

REPEATING STUDENTS:

Final exam: 50%.

Midterm tests and practice activities: 50%.

PLAGIARISM AND THE USE OF ILLEGITIMATE MEANS IN ASSESSMENT TESTS WILL BE SANCTIONED IN ACCORDANCE WITH THE UNIVERSITY'S EVALUATION AND COEXISTENCE REGULATIONS.

To ensure meaningful learning by the student, deadlines for all proposed activities, both individual and group assignments, will be strictly observed. In all submissions, assignments, and exams, if the instructor deems it appropriate, the grade may be adjusted—upward or downward—based on the oral defense of the work.

ETHICAL AND RESPONSIBLE USE OF ARTIFICIAL INTELLIGENCE

1.- The use of any Artificial Intelligence (AI) system or service shall be determined by the lecturer, and may only be used in the manner and under the conditions indicated by them. In all cases, its use must comply with the following principles:

- a) The use of AI systems or services must be accompanied by critical reflection on the part of the student regarding their impact and/or limitations in the development of the assigned task or project.
- b) The selection of AI systems or services must be justified, explaining their advantages over other tools or methods of obtaining information. The chosen model and the version of AI used must be described in as much detail as possible.
- c) The student must appropriately cite the use of AI systems or services, specifying the parts of the work where they were used and describing the creative process followed. The use of citation formats and usage examples may be consulted on the Library website(https://www.ufv.es/gestion-de-la-informacion_biblioteca/).
- d) The results obtained through AI systems or services must always be verified. As the author, the student is responsible for their work and for the legitimacy of the sources used.

2.- In all cases, the use of AI systems or services must always respect the principles of responsible and ethical use upheld by the university, as outlined in the [Guide for the Responsible Use of Artificial Intelligence in Studies at UFV](#). Additionally, the lecturer may request other types of individual commitments from the student when deemed necessary.

3.- Without prejudice to the above, in cases of doubt regarding the ethical and responsible use of any AI system or service, the lecturer may require an oral presentation of any assignment or partial submission. This oral evaluation shall take precedence over any other form of assessment outlined in the Teaching Guide. In this oral defense, the student must demonstrate knowledge of the subject, justify their decisions, and explain the development of their work.

BIBLIOGRAPHY AND OTHER RESOURCES

Basic

Thomas, K. (2024) The Simple Guide to SAS: From Null to Novice SAS