TEACHER'S GUIDE SHEET

MODULE	FOUNDATIONS OF BIOMECHANICS APPLIED TO THE LOCOMOTOR SYSTEM
DIDACTIC UNIT	D: TECHNIQUES FOR THE INSTRUMENTAL ANALYSIS OF MOVEMENTS AND FORCES D.2: How can forces be measured and which parameters can be analyzed? What are its main applications?
TITLE OF ACTIVITY/CLASS	• Measuring Forces
OBJECTIVES	• Find out which are the main techniques for instrumental analysis of forces, their principal characteristics and fields of application through examples. • Work on the instrumental study of the forces in activities and/or gestures.
LENGTH	120' OF CLASS MATERIAL IN TOTAL, including the teacher´s presentation and Workshop.
PREVIOUS KNOWLEDGE REQUIRED	In order to prepare this class**,** the student should revise in advance the pdf document associated to this didactic unit (D.2): How can forces be measured and which parameters can be analyzed? What are its main applications? (Autonomous work section).
TECHNICAL NEEDS	PC with software for the reproduction of a power point presentation and/or a video with audio. Projector and screen to show contents appropriately to all the students during class. For performing Workshop 1: Students need a personal computer to connect to the Internet and access information searches. They will also use the worksheet printed out for students to fill in.

DESCRIPTION OF THE CLASS/ACTIVITY

A power point will be used by the teacher in order to guide the class:

1st part: Presentation of the main classification of techniques for instrumental analysis of forces and pressures and main application fields (30´).

The teacher will introduce this activity remembering concepts and classification of force&pressure analysis techniques. Teacher will present a given example (clinical case) of application of force analysis techniques in biomechanics evaluation. It is worthy to highlight differences between techniques regarding results and measurement objective.

2nd part: Workshop (30´)

The teacher will introduce this Workshop in the following order:

1. Students are grouped in pairs for this work. A name must be assigned to the pair.
2. Each couple must think about a TOPIC regarding application of force analysis techniques in any ambit of interest (for example, measuring pressures while running)
3. Each couple will then use the PC to look for scientific papers regarding the TOPIC selected, and will make a brief summary of the information obtained, following the questions proposed in the worksheet assigned.
4. After that, they will prepare a power point (or similar) presentation showing the information gathered and analysing the scientific paper revised.

3nd part: Presentation (60´) and Conclusions

The teacher will introduce each couple for the presentation. At the end of all presentations, the teacher will guide a little discussion about the different techniques and applications of work presented. The teacher will encourage students to discuss about advantages and disadvantages of techniques and its applications.

NOTE: to guide the whole class the teacher can either chose to use the power point presentation provided, the video with the whole presentation of contents included, or both of them.

TASKS TO BE DEVELOPED BY THE STUDENT OUTSIDE OF CLASS (If required)

In order to fully understand the concepts explained during class, the student should revise in advance the pdf document associated to this didactic unit D: How can forces be measured and which parameters can be analyzed? What are its main applications? (Autonomous work section)

EVALUATION METHODOLOGY

OPTIONAL (in case the teacher decides to evaluate the activity)

The teacher will evaluate the answers of the worksheet and the presentations of each couple, according to their criteria and acceptance among the rest of the students in the class.