TEACHER'S GUIDE SHEET

MODULE	BIOMECHANICS OF SPINE
DIDACTIC UNIT	D: INSTRUMENTED ANALYSIS OF THE SPINE D.2. Which dorsal and lumbar biomechanical instrumented evaluation protocols exist?
TITLE OF ACTIVITY/CLASS	Which dorsal and lumbar biomechanical instrumented evaluation protocols exist? Definition of an assessment protocol
OBJECTIVES	• Remembering the main elements that define a biomechanical assessment test • Knowing some protocols used for the kinematic evaluation of the dorsal and lumbar spine • Knowing some protocols used for the assessment of muscle strength and activity in trunk • Analyzing a protocol of kinematic assessment of lumbar spine defined in a scientific paper
LENGTH	1h' OF CLASS MATERIAL IN TOTAL, including the power point presentation (about 30') and the class activity (about 30')
PREVIOUS KNOWLEDGE REQUIRED	In order to fully understand the concepts explained during class, and to work fluently on the activity, the student should revise in advance the video associated to this didactic unit (provided in the autonomous work teacher's material)
TECHNICAL NEEDS	PC with software for the reproduction of a power point presentation. Projector and screen to show contents appropriately to all the students during class. It is also advisable to count on internet connection, to be able to access to the hyperlinks provided in the presentation if the teacher finds it appropriate.

RESOURCES NEEDED	The class distribution should allow the gathering of the students into a series or working groups. Each group should count on at least one scientific paper recommended to help them during the activity (articles from S. Alqhtani et al). Also, they should count on the pertinent resources to be able to write down the results of the activity proposed, whether it is done in paper, or in a PC.

DESCRIPTION OF THE CLASS/ACTIVITY

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

1st part: PROFFESOR EXPLANATION (20' TO 30')

Power point class presentation

First , some knowledge about the main elements that define a biomechanical assessment test, as well as some protocols for the instrumented analysis of the dorsal and lumbar spine will be shared. The teacher is responsible for explainging the theoretical parts of the power point class presentation, which is in turn based on that from the teacher's autonomous work section (video an power point). It is important to highlight the importance of defining an assesment protocol thoroughly, taking into account all possible matters that could alter the measurement results.

2nd part: CLASS ACTIVITY (30' TO 40')

Power point class presentation (slide 33)

The teacher will introduce this workshop by means of the last slide of the power point presentation (slide 33), where basic instructions for the students are given.

The students will gather in groups of X people (depending on the total amount of students participating, the teacher will decide how many members will form each group). Each group should count on the necessary recources to write down the results of the activity (either in paper or in a PC) and on the scientific paper from S. Alqhtani et al, which they will work on.

After reading carefully the methods section of the article, they will discuss the following questions:

- Look at the measurement protocol, including instrumentation, gestures, conditions, instructions-orders
- Could you exactly reproduce the experiment in an equivalent way?
- Do you think it is necessary to describe some extra element in order to reproduce it? Which one? Why is it important and in what way do you think this could affect the results?

Finally, and depending on the remaining time of class and the number of student groups, each group will explain their ideas and the protocol designed to the rest of the students.

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

In order to fully understand the concepts explained during class, and to work fluently on the activity, the student should revise in advance the video associated to this didactic unit (provided in the autonomous work teacher's material)

EVALUATION METHODOLOGY

OPTIONAL (only in case the teacher decides to evaluate the activity; ALSO in case the teacher decides so, they can choose another evaluation system or punctuation grading if they find it more appropriate in the given context)

To evaluate the activity, the teacher might have into account:

- The level of depth and detail in which the protocol is revised and the clarity of the explanation in class (from 0 = subject only superficially adressed and not clearly exposed to 5 = subject treated in depth and explaind with far enough clarity).