TEACHER'S GUIDE SHEET

MODULE	MODULE BIOMECHANICS: FOUNDATIONS OF BIOMECHANICS APPLIED TO THE LOCOMOTOR SYSTEM
DIDACTIC UNIT	E: TECHNIQUES FOR THE INSTRUMENTAL ANALYSIS OF PHYSIOLOGICAL SIGNS AND ANTHROPOMETRIC AND MORPHOMETRIC PARAMETERS E.3. How can I measure morphometric and anthropometric parameters?
TITLE OF ACTIVITY/CLASS	Traditional and modern, sensor-based measurement methods for morphometric and anthropometric parameters acquisition.
OBJECTIVES	• Get to know the basic morphometric and anthropometric parameters definition, body mark localizations and classical measurement procedures by means of manual tools. • Become familiar with modern automatic measurement methods that use electronic equipment to determine the anthropometric parameters of human posture and movement.
LENGTH	20 MINUTES OF CLASS IN TOTAL.
PREVIOUS KNOWLEDGE REQUIRED	It is advisable for the student to have at least basic knowledge about human anatomy as well as read the theoretical document associated to this module.
TECHNICAL NEEDS	PC with software for the reproduction of videos with audio and power point presentation. Projector and screen to show contents appropriately to all the students during class
RESOURCES NEEDED	Measuring instruments, at least a tape measure and cards with list of anthropometric parameters to measure during work in groups.

DESCRIPTION OF THE CLASS/ACTIVITY

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

BASIC CONCEPTS

At the beginning of the lesson the basic anthropometric parameters as well as measurement procedure will be presented (2 min).

TASK:

Based on theoretical introduction, students working in groups of 8-12 people will start to practically measure on themselves or/and each other a chosen anthropometric parameters by means of measuring tape and calculate for every anthropometric parameter basic measurement statistics (15 min).

EXPLAINING AND SECOND PART OF LECTURE:

After verifying the correctness of practical measurements, the professor continues his lecture by presenting automatic methods of measuring body and gait parameters using the so-called motion capture methods (3 min).

CONCLUSIONS OF THE CLASS

The professor concludes by drawing attention to the accuracy of the measurement of anthropometric characteristics, while emphasising the role of new electronic technologies in the progress that is being made in this field.

TASKS TO BE DEVELOPED BY THE STUDENT IN CLASS

TASK: Students in groups of 8-12 persons make measurements of the anthropometric parameters written on cards using the measuring tape and enter the measurements into the measuring table. Alternatively, data can be downloaded and entered into tables in a simulated manner from available sources.

- Students measure following anthropometric parameters and enter results into table:

  - head circumferences (HC)
  - chest circumferences (CC)
  - waist circumferences (WC)
  - hip circumferences (HipC)
  - mid upper arm circumference (MUAC)

- After measurements and fulfilling the tables students calculate for every anthropometric parameter basic measurement statistics: average value and spread measure - standard deviation and discuss within the group and with the professor obtained results.

They will have 15 minutes to do this task.

Once completed the task, the students will give the teacher back the completed measurements cards.

EVALUATION METHODOLOGY

The teacher will collect the measurement cards with table fulfilled from every student group.

Each of them should be properly identified by the group ID (one card for one group).

The teacher will evaluate generally the activity of student group.

A general positive/negative overall score is awarded.