



## Biomechanical Aspects of Balance and Postural Control

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### Objectives:

1. The student will understand the basic concepts of balance and postural control.
2. The student will acquire knowledge about the mechanisms that determine postural abilities in the human body.
3. The student will acquire knowledge about balance abilities of different populations.
4. The student will acquire skills of assessing balance by different biomechanical tools.

### Short Course Description:

The course will include 14 sessions, each addressing a specific topic. The course will be taught both in class and online materials and quizzes for practice and self-evaluation. In addition to the availability of the on-line modules, study materials will be discussed and exercised in class sessions.

### Course Program:

#	Date	Topic	Remarks
1		Basic concepts of balance and postural control	
2		The balance systems in the human body	
3		Different biomechanical balance assessments	
4		Postural development in toddlers	
5		Postural abilities among children and youth	
6		Postural abilities among adults	

7		Postural abilities during injury	
8-9		Postural ability among special populations	
10		Field tests for balance assessment	
11		Practical exercise of field assessment	
12		Balance improvement programs – theoretical aspects	
13		Balance improvement programs – practical aspects	
14		Student presentations	

### **Student Workload**

30 contact hours + home workload 5 ECTs

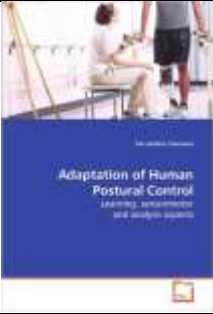
### **Student Obligations:**

1. To read the online materials addressed in all online modules
2. To report to the online quizzes
3. To write a report about the content and practical implications of a research paper
4. To present a practical training of a preselected topic

### **Assessment Criteria:**

1. 50 % final examination
2. 15 % written report of research paper
3. 15 % online assignments and quizzes
4. 20% class presentation

## References:

<p>Per-Anders, F. (2009). <i>Adaptation of Human Postural Control: Learning, sensorimotor and analysis aspects</i>. Saarbrücken: VDM Verlag.</p>	
<p>Bronstein, A. M., Brandt, T., Woollacott, M.H., Nutt, J.G (Eds.) (2004). <i>Clinical Disorders of Balance, Posture and Gait</i>, 2Ed. London: Arnold.</p>	