



European Campus
of City-Universities

GLADE - Literacy Lab	EC2U Virtual Institute for Good Health and Well-being (GLADE) -
Name of the module	SMART AGEING AND HEALTHY LIFE Summer School, first Edition.
Course title (L-lecture / W-workshop)	Towards personalized physical activity programs to reduce the risk of falling in older adults
Course leader/Lecturer Academic title, first and last name Link to an updated CV (EN)	Dr. Romain Tisserand, Ph.D.
Language of instruction	English
Course description Maximum 100-120 words	The consequences of a fall are often devastating for ageing people and a major challenge for researchers and clinicians remains to predict when a first fall will occur. The proposed lecture will present the neuro-biomechanisms of balance recovery, how they can be evaluated and how these mechanisms are impacted by normal ageing. Based on the multifactorial model from Horak (2006), the lecture will then focus on the different resources involved in the control of upright balance, and how these resources can be addressed in personalized physical activity training for a better fall risk prevention.
Tackled concepts 5 to 7 of the topics covered / lecture content	Balance in humans, Risk of falling and its consequences on health, Ageing, Biomechanics of balance, Motor control of balance, Physical activity, Personalized intervention
Prerequisites	none
Learning methods / Instruction modes Lecture/workshop/practical application /field activity - interactive approach supported by academic articles, case studies, videos, class debates	Lecture, videos and debate
Assignments class participation, problem-solving sessions, practical application, case study, group discussions, group assignments/presentations, posters	Lecture participation
Evaluation	class participation and module final evaluation test
Bibliography/Course material Recommended reading	Masud & Morris (2001) <i>Epidemiology of falls</i> , Age Ageing 30: 3-7 Murphy & Isaacs (1986) <i>The post-fall syndrom</i> , J Gerontology 28: 265-270 Horak (2006) <i>Postural orientation and equilibrium: what do we need to know about neural control of balance to prevent falls?</i> , Age & Ageing 35: 7-11 Horak & Nashner (1986) <i>Central programming of postural movements</i> , J Neurophysiology 55: 1369-1381 Maki & McIlroy (1997) <i>The role of limb movements in maintaining upright stance: the change-in-support strategy</i> , Physical Therapy, 77: 488-507

The above mentioned curricular activity is part of the EC2U - GLADE Virtual Institute - SMART AGEING AND HEALTHY LIFE Summer School, first Edition. In order for the participants to be able to sit the final evaluation test, they need a minimum of 70% presence at the curricular and extracurricular activities. A pass/fail grading system is used in evaluating the participants, the decision on the awarding of the 3 ECTS credits being based on their active participation in classes and on their successfully passing the module final evaluation.