

## SG2804 Biomechanics of human movement, Autumn 2016

Wk	Date	Time	Room	Topics	Reading	Assignment due
44	Mon 31-Oct	10-12	D33	L1: Course contents Anatomy, Motion definitions, biological tissues	Ch 1, 2	
	Tues 1-Nov	10-12	D35	L2: Soft tissues biomechanics, Muscle tissue and activation	Ch 3, 6	
	Wed 2-Nov	15-17	D32	L3: Motion and motion analysis	Ch. 8,9	
	Thurs 3-Nov	13-16	Karol	Field trip: Experiments in motion analysis lab, Karolinska Univ Hosp.		
45	Mon 7-Nov	10-12	M122	Lab 1: OpenSim Intro, Tutorial 1		
	Tues 8-Nov	10-12	E51	L4: Muscle biomechanics and physiology	Ch. 10,11	
	Thurs 10-Nov	13-15	D32	L5: Muscle biomechanics continued	Ch. 4	Review Questions Chap 3 & 6 (assigned questions)
46	Mon 14-Nov	10-12	D32	L6: <i>Presentations</i>		OpenSim tutorial 1 to ruoli@kth.se
	Tues 15-Nov	10-12	D33	L7: Kinematics of normal walking	Ch. 9	HW1 (Motion lab kinem) - <i>present</i>
	Thu 17-Nov	13-15	D32	L8: Inverse dynamics, Kinetics and muscle activities in walking		Ch 11 Review questions (all T/F and problems 12,18, 20, 21, 24, 25)
47	Mon 21-Nov	10-12	M122 (B)	Lab 2: OpenSIM IK+ID		
	Wed 23-Nov	15-17	D42	L9: Optimization in biomechanics (Guest)		
	Thurs 24-Nov	13-15	E34	L10: Muscle modelling	Handout	
48	Mon 28-Nov	10-12	D33	L11: Sports applications (guest)		HW2 (Motion lab kinetics) <i>reports due 9.00</i> OpenSim tutorial 3 to ruoli@kth.se
	Tues 29-Nov	10-12	E34	L12: Pathological walking		
	Wed 2-Dec	15-17	M122 (B)	Lab 3: OpenSIM RRA + CMC		
49	Mon 5-Dec	10-12	E34	L13: Orthopedic surgery (guest)	Handout	
	Thurs 8-Dec	13-15	L41	L14: Presentations, Description of final project		HW3 <i>present</i>
	Fri 9-Dec					OpenSim tutorial 4 to ruoli@kth.se
51	Mon 12-Dec	10-12	D33	L15: Weakness and compensation, walking aids		
	Thurs 15-Dec	13-15	D33	L16: Current topics, Jogging	Handout	HW4 (OpenSIM RRA+CMC) <i>reports 12.00</i>
	Fri 16-Dec		Mek	Teaching Assistant available for OpenSIM help		
3	TBD	TBD	TBD	Final project presentations		1-page summary due (kl. 9.00)

Course teacher: Lanie Gutierrez-Farewik. Assistant: Ruoli Wang

Guest Lecturers: Professor Anders Eriksson (KTH), Stefan Gantelius (Orthopedic Surgeon, Karolinska  
Institutet/Hospital), Professor Toni Arndt (GIH)

Reading assignment chapters refer to Hamill and Knutzen, Biomechanical Basis of Human Movement