HUMAN MOTION ANALYSIS COURSE

- curricula -

Elaborated by (Name of the organization)	UNIVERSITY OF CRAIOVA (ROMANIA) NATIONAL CENTER FOR SCIENTIFIC RESEARCH “DEMOKRITOS” (GREECE) BIOMECHANICS INSTITUTE OF VALENCIA (SPAIN) CLINICAL EMERGENCY HOSPITAL BUCHAREST (ROMANIA) DEMOCRITUS UNIVERSITY OF THRACE (GREECE)
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LEONARDO DA VINCI

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Number of module	*Name of module*	*Sub-modules*
1	*Physics of the human body motion*	*1.1. Basic knowledge compulsory to study the human body motion like statics, kinematics, dynamics.*
		1.2. Basic knowledge on material strength and elasticity theory compulsory to study the human body motion like stress, strain, deformations, etc.
		1.3. Basic knowledge on materials and biomaterials properties.
2	*Basic anatomy of human body motion*	*2.1. Basic knowledge on bone tissue structure and properties.*
		2.1. Physiology and morphology of the bone tissue.
		2.3. Effects of external stimuli on bones shape and structure.
		2.4. Biomathematics applied on bone structure modeling.
		2.5. Basic knowledge on joints structure.
		2.6. Physiology and morphology of the joints.
		2.7. Basic knowledge on muscle structure.
		2.8. Physiology and morphology of the muscles.
		2.9. Biomathematics applied on muscle structure modeling.
		2.10. Anatomic and biomechanics analysis of walking.
3	*Modern techniques in human motion analysis*	*3.1. Data acquisition and analysis of human motion using specific video analysis systems – theory and case studies.*
		3.2. Data acquisition and analysis of human motion using specific force/balance and contact pattern plates – theory and case studies.
		3.3. Stress/strain evaluation in human musculoskeletal system using finite elements method.
		3.4. Applications of the modern investigation methods on rehabilitation, motion analysis, surgical planning and prosthetics. Case studies.