

## UČNI NAČRT PREDMETA / COURSE SYLLABUS

<b>Predmet:</b>	Kineziologija v monostrukturnih športih
<b>Course title:</b>	Kinesiology in Mono-structural Sports

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Doktorski študijski program		1	1 ali 2
Doctoral study program		1	1 or 2

Vrsta predmeta / Course type Izbirni/elective

Univerzitetna koda predmeta / University course code:  

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
20	30	10		65		5

Nosilec predmeta / Lecturer: prof. dr. Milan Čoh

Jeziki / Languages:	Predavanja / Lectures:	Slovenski/Slovene
	Vaje / Tutorial:	

**Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:**

Izpolnjevanje pogojev za vpis na doktorski študij Kineziologija

**Prerequisites:**

General conditions for enrolment into the Doctoral Programme of Kinesiology

**Vsebina:**

Predmet je razdeljen na naslednje vsebinske sklope:

- Biomehanska diagnostika in objektivizacija gibalnih struktur – integrativno proučevanje monostrukturnih športnih aktivnosti ( kinematika, dinamika, EMG, funkcionalne in biokemijske značilnosti)
- Mehansko modeliranje in računalniška simulacija gibanja v monostrukturnih športnih aktivnostih
- Proučevanje metodologije in modeliranja baze znanja na področju teorije izbranega športa
- Optimizacija vadbenih procesov v vzdržljivostnih športih
  - Ekspertni modeli identifikacije talentov in tekmovalne uspešnosti v monostrukturnih športnih aktivnostih
  - Teorije in prakse pri načrtovanju vadbenih procesov v monostrukturnih športih

**Content (Syllabus outline):**

The course is divided in the following modules:

- Biomechanical diagnostics and objectivisation of movement structures – integrated study of monostructural sport activities (kinematics, dynamics, EMG, functional and biochemical characteristics)
- Mechanical modelling and computer simulation of movements in monostructural sport activities
- Study of the knowledge base methodology and modelling in the theory of the selected sport
- Optimisation of training processes in endurance sports
- Expert models for identification of talents and competitive performance in monostructural sport activities
- Theories and practices in the planning of training processes in monostructural sports
- Control of thermoregulation processes using thermovision in monostructural cyclic activities
- Development of speed of simple and complex reactions using controlled neurological protocols

- Kontrola termoregulacijskih procesov s pomočjo termovizije v monostrukturnih cikličnih aktivnostih
- Razvoj hitrosti enostavne in kompleksne reakcije s pomočjo vodenih nevroloških protokolov
- Zasnova, načrtovanje in izpeljava znanstvenega projekta vključno z pripravo poročila o doseženih rezultatih raziskovanja in načina predstavitve rezultatov znanstveni in strokovni javnosti.

- Design, planning and implementation of a scientific project, including the drawing up of a report on research results and result presentation method to the scientific and professional communities.

### Temeljni literatura in viri / Readings:

Morrow J.: Measurement and valuation in Human Performance, Human Kinetics, Champaign, IL, 2005.  
Zatsiorsky V.: Biomechanics in Sport, Blackwell Science, 2000.

Robertson D., Caldwell G., Hamill V. , Kamen G., Whittlesey S.: Research Methods in Biomechanics. Human Kinetics, Champaign, IL, 2004

Peri T., Nelson J.: Research Methods in Physical Activity. Human Kinetics, Champaign, IL, 2001

Hoffman J.: Norm for Fitness Performance and Health, Human Kinetics, Champaign, IL, 2006.

Weineck, J.: Optimales Training. Spitta Verlag GmbH & Co, 2008

Whiting W., Zernicke, R.: Biomechanics of Musculoskeletal Injury, Human Kinetics, Champaign, IL, 1998.

Škof B. in sod.: Šport po meri otrok in mladostnikov – Pedagoško-psihološki in biološki vidiki kondicijske vadbe mladih, Fakulteta za šport, Univerza v Ljubljani, 2007.

Bartlett R.: Sports Biomechanics – Reducing Injury and Improving Performance, E & FN Spon, Imprint of Routledge, 1999.

Čoh, M.: *Biomechanical diagnostic methods in athletic training*. Ljubljana: Faculty of Sport, Institut of Kinesiology, 2008. ISBN 978-961-6583-61-9.

Bompa T.: Periodization – Theory and Methodology of Training. Human Kinetics, Champaign, IL, 1999

Jošt, B., Pustovrh, J., Ulaga M., Jošt. P.: The latent dimensions of selected morphological and motor variables in ski jumpers. *Stud. Phys. Cult. Tour.*, 2006, vol. 13, suppl., str. 137-140.

**Cilji in kompetence:**

**Objectives and competences:**

**Cilji:**

- Študenti bodo dobili specifična, poglobljena znanja s področja kineziologije monostrukturnih športov, ki jih bodo povezali z znanstveno-raziskovalnim in razvojnim delom,
- Seznanili se bodo z sodobnimi diagnostičnimi tehnologijami v področju kineziologije monostrukturnih športov,
- Naučiti študente povezovanja znanstveno raziskovalno delo z prakso,
- Razviti komunikacijske sposobnosti študentov z vidika prezentacije rezultatov znanstvenega dela na konferencah, kongresih in okroglih mizah.

**Specifične kompetence:**

- Sposobnost samostojnega znanstveno-raziskovalnega in razvojnega dela na področju kineziološke znanosti,
- Razviti sposobnost pisanja znanstveno raziskovalnih del za mednarodne in domače znanstvene revije,
- Razviti kritičen odnos do rezultatov lasnega znanstveno raziskovalnega dela,
- Razviti sposobnost timskega sodelovanja s strokovnjaki različnih področij,
- Obvladati delo z raziskovalnimi tehnologijami.

**Predvideni študijski rezultati:**

- Znajo smiselno načrtovati in izvesti eksperiment,
- Znajo upravljati z raziskovalno tehnologijo,
- Znajo zasnovati, načrtovati in izpeljati znanstveni projekt vključno z pripravo poročila o doseženih rezultatih raziskovanja in načina predstavitve rezultatov znanstveni in strokovni javnosti,
- Znajo oblikovati znanstveni tekst,
- Znajo komunicirati z raziskovalci s sorodnih področij.

**Metode poučevanja in učenja:****Objectives:**

- Students will gain specific, in-depth knowledge in the field of kinesiology of monostructural sports that they will connect with their scientific-research and development work.
- They will learn about modern diagnostic technologies in the area of kinesiology of monostructural sports.
- They will learn how to connect the scientific-research work with the practice.
- Students will develop communication skills in terms of presentation of the results of the scientific work at conferences, congresses and round tables.

**Specific competences:**

- Ability to independently perform scientific-research and development work in the science of kinesiology.
- Develop the ability to write scientific-research papers for international and domestic scientific journals.
- Develop a critical attitude to the results of their own scientific-research work.
- Develop the ability for team work with experts from various fields.
- Gain proficiency in working with research technology.

**Intended learning outcomes:****Knowledge and understanding:**

- They learn how to reasonably plan and conduct an experiment.
- They learn how to manage the research technology.
- They learn how to design, plan and implement a scientific project, including the drawing up of a report on research results and result presentation method to the scientific and professional communities.
- They learn how to make a scientific paper.
- They learn how to communicate with the researchers from related fields.

**Learning and teaching methods:**

Predavanja, seminarji, eksperimentalne vaje, javni kolokviji, laboratorijske meritve, terenske meritve.

Lectures, seminars, laboratory work, public colloquia, laboratory measurements, field measurements.

Načini ocenjevanja:		Delež (v %) / Weight (in %)	Assessment:
Način (pisni izpit, ustno izpraševanje, naloge, projekt)			Type (examination, oral, coursework, project):
Ustni izpit, uspešno izveden eksperiment, seminar z zagovorom, objava članka v mednarodni znanstveni reviji .		100 %	Oral examination, successfully carried out an experiment, seminar and presentation, publication of an article in an international scientific journal.

**Reference nosilca / Lecturer's references:**

ČOH, Milan. *Track and field applied research in sprint and jump*. Saarbrücken: Lambert Academic Publishing, 2014. 110

ČOH, Milan, MACKALA, Krzysztof. Differences between the elite and sub-elite sprinters in kinematic and dynamic determinations of countermovement jump and drop jump. *Journal of strength and conditioning research*, ISSN 1533-4287, nov. 2013, vol. 27, issue 11, str. 3021-3027

ČOH, Milan, ŠTUHEC, Stanko, SUPEJ, Matej. Comparative biomechanical analysis of the rotational shot put technique. *Coll. antropol.*, 2008, vol. 32, no. 1, str. 315-321

ČOH, Milan, TOMAŽIN, Katja, RAUSAVLJEVIĆ, Nikola. Differences in morphological and biodynamic characteristics of maximum speed and acceleration between two groups of female sprinters. *Biol. Sport*, 2007, vol. 24, no. 2, str. 115-128

ČOH, Milan, ŠIROK, Brane. Use of thermovision method in sport training = Upotreba termovizijskih metoda u sportskom treningu. *Facta Universitatis. Series, Physical education and sport*, 2007, vol. 5, no. 1, str. 85