

	UCNI NACRT PREDMETA/COURSE SYLLABUS
Predmet	Fiziologija v športu
Course title	Physiology in Sport

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Fizioterapija / I. stopnja	Ni smeri študija	3. letnik	6.
Physiotherapy / I st Cycle	No study field	3 rd year	6 th

Vrsta predmeta/Course type modularni/module

Univerzitetna koda predmeta/University course code FTH 3 M5 UN I

Predavanja Lectures	Sem. vaje Tutorial	Kab. vaje Cabinet tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
45		30			75	5

Nosilec predmeta/Lecturer:

Jeziki/ Languages:	Predavanja/Lectures:	slovenski/Slovenian
	Vaje/Tutorial:	slovenski/Slovenian

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	Prerequisites:
Vpis v tretji letnik študijskega programa.	A prerequisite for inclusion is enrolment in the third year of study.

Vsebina:	Content (Syllabus outline):
<ul style="list-style-type: none"> • <i>Biomehanično ocenjevanje.</i> <ul style="list-style-type: none"> - Funkcionalna anatomija sklepov in mišično-kitnih enot. - Lastnosti kosti, kit, ligamentov, sklepnega hrustanca in mišic. - Analiza človekovega gibanja, osnove kinematike in kinetike. - Biomehanična analiza posameznih športov. - Principi telesne morfologije. • <i>Telesna adaptacija na vadbo.</i> <ul style="list-style-type: none"> - Energetski sistemi pri vadbi. 	<ul style="list-style-type: none"> • <i>Biomechanical assessment.</i> <ul style="list-style-type: none"> - Functional anatomy of joints and musculotendinous units. - Characteristics of bones, tendons, ligaments, articular cartilage and muscles. - Human movement analysis – basic kinematics and kinetics. - Biomechanical analysis of individual sports. - Principles of body morphology. • <i>Body adaptation to exercise.</i>

<ul style="list-style-type: none"> - Bazalni metabolizem pri vadbi. - Kardiovaskularna adaptacija na vadbo. - Celični metabolizem in biomehanične poti energetske proizvodnje. - Telesni energetski prenosi med vadbo. - Nevromuskulatorna adaptacija na vadbo. - Principi treningov. <ul style="list-style-type: none"> • <i>Prehrana in vadba.</i> <ul style="list-style-type: none"> - Makrohranila in energija. - Mikrohranila. - Pomen hidracije. - Principi izkoriščanja hranil med vadbo: ogljikovih hidratov, maščob in beljakovin. - Telesno ocenjevanje: indeks telesne teže. • <i>Zdravila v športu.</i> <ul style="list-style-type: none"> - Vpliv farmacevtskih učinkovin na telesno pripravljenost. - Doping regulativa s strani avtoritet IOC in WADA. - Terapevtska uporaba zdravil pri boleznih in poškodbah. - Nesteroidne protivnetne učinkovine oz. NSAIDs (non-steroidal anti-inflammatory drugs). 	<ul style="list-style-type: none"> - Energy systems in exercise. - Basal metabolic rates. - Cardiovascular adaptation to exercise. - Cellular metabolism and biomechanical pathways of energy production. - Human energy transfer system during exercise. - Neuromuscular response to exercise. - Principles of training. <ul style="list-style-type: none"> • <i>Nutrition and exercise.</i> <ul style="list-style-type: none"> - Macronutrients and energy. - Micronutrients. - The importance of hydration. - Principles of substrate utilisation during exercise: carbohydrates, lipid and protein utilisation. - Body composition: body mass index. • <i>Drugs in sport.</i> <ul style="list-style-type: none"> - Effects of various pharmaceutical agents on the exercise performance. - Doping regulations by IOC and WADA authorities. - Therapeutic use of drugs for illness and injuries. - Non-steroidal anti-inflammatory drugs.
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Temeljna literatura in viri/Readings:

Temeljna literatura/Basic literature

- Brumec, V. in Vučetič Zavrnik, L. (1989). Ljubljana: Univerza Edvarda Kardelja Ljubljana. Fakulteta za telesno kulturo, Oddelek za založništvo.
- Lasan, M. (2004). *Fiziologija športa: Harmonija med delovanjem in mirovanjem*. Ljubljana: Fakulteta za šport, Inštitut za šport.
- Sevšek, F. (2004). *Biomehanika*. Ljubljana: Univerza v Ljubljani. Visoka šola za zdravstvo.

Priporočljiva literatura/Recommended literature

- Brooks, G. A., Fahey, T. D. in Baldwin, K. M. (2005). *Exercise physiology: Human bioenergetics and its applications*. Boston: McGraw-Hill.
- Satu, M.S. (1996). *Pharmacology in exercise and sport*. Florida: CRC Press: Boca Raton.
- Stewens, A., Sutton, L. (2012). *Body composition in sport., exercise and health*. New York: Abingdon (Oxon).

Cilji in kompetence:

Cilj predmeta je, da študent pridobi teoretično in praktično znanje o človeških biomehanskih karakteristikah in vplivu vadbe na telesne spremembe.

Pridobi tudi znanje o vplivu prehrane na vadbo in telesne spremembe in varno ter smiselno uporabo zdravil.

Učna enota prispeva predvsem k razvoju naslednjih splošnih in specifičnih kompetenc:

- uporabo teoretičnega in praktičnega znanja iz področja:
 - biomehanike, kot osnova za omejitve oz. specifično prilagojene programe obravnave športnika,
 - osnovnih lastnosti telesnih energetskih sistemov in adaptacije telesa na vadbo,
 - makro in mikro-hranil ter hidracija,
 - osnove biomehanskih značilnosti posameznih športov,
 - osnove farmakoloških učinkovin,
- avtonomnost pri strokovnem delu in sprejemanju samostojnih odločitev pri omejevanju športnih aktivnosti,
- presojanje kakovosti lastnega dela z uporabo zanke kakovosti – nenehno preverjanje smotrnosti odločitev,
- samostojno in odgovorno vseživljenjsko učenje na svojem strokovnem področju, upoštevanje novih znanj in tehnik pri zagotavljanju učinkovitega preventivno-rehabilitacijskega programa,
- analizo telesnega gibanja z vidika funkcionalnih sposobnosti lokomotorne sistema, ergonomije in rehabilitacije.

Objectives and competences:

The objective of the course is that the student acquires theoretical and practical knowledge about the human biomechanical characteristics and the impact of exercise on body modification.

They also acquire knowledge on the impact of nutrition on exercise and physical changes and safe and sensible use of medications.

The learning unit mainly contributes to the development of the following general and specific competences:

- use of theoretical and practical knowledge in the field of:
 - biomechanics, as a basis for restrictions or specific personalized programmes of treating the athlete,
 - basic properties of the body's energy systems and adaptation of the body to exercise,
 - macro and micro nutrition and hydration,
 - basic biomechanical characteristics of individual sports.
 - basic information on pharmacological substances,
- autonomy in professional work and decision making in restriction of sports activities,
- evaluating personal work quality by using the quality loop – constantly checking the rationality of decision,
- independent and responsible lifelong learning in one's own professional field, consideration of new skills and techniques in providing effective preventive-rehabilitation exercise programme,
- analysis of body movement from the perspective of functional abilities of the locomotor system, ergonomics and rehabilitation.

Predvideni študijski rezultati:**Študent/študentka:**

- pozna teoretična in praktična znanja stopnje telesne pripravljenosti in

Intended learning outcomes:**Students:**

- possess theoretical and practical knowledge on the level of physical fitness

<p>osnovne značilnosti delovanja telesnega metabolizma in uporabe zdravil,</p> <ul style="list-style-type: none"> • razume rezultate posameznih testov telesne pripravljenosti in se zna do njih kritično opredeliti, • glede na rezultate testov se opredeli do stališča glede nadaljevanja telesne aktivnosti in možnosti postopne in varne vadbe v smeri doseganja višjega nivoja telesne pripravljenosti, • organizira rehabilitacijski proces, • svoja stališča zna argumentirati znotraj tima. 	<p>and know the basic characteristics of the body's metabolism and use of medications,</p> <ul style="list-style-type: none"> • understand the results of individual tests of physical fitness and are able to critically interpret them, • according to the results of the tests, they define their position towards the continuation of physical activity and possibilities for progressive and safe exercise for achieving a higher level of physical fitness, • organise the rehabilitation process, • can define their views within the team.
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Metode poučevanja in učenja:

- *predavanja* z aktivno udeležbo študentov (razlaga, diskusija, vprašanja, primeri, reševanje problemov),
- *kabinetne vaje*: demonstracija, metoda praktičnih del, delo v parih, študije primera, razgovor, diskusija, simulacija.

Learning and teaching methods:

- *lectures* with active student participation (explanation, discussion, questions, examples, problem solving);
- *cabinet tutorial*: demonstration, method of practical work, work in pairs, case studies, conversation, discussion, simulation.

Načini ocenjevanja:

- Načini:
- pisni izpit
 - kolokvij

Ocenjevalna lestvica: ECTS.

Delež (v %)
Weight (in %)

80 %
20 %

Assessment:

- Types:
- written exam
 - preliminary exam

Grading scheme: ECTS.