SUBJECT DESCRIPTION

Full name of subject: Biomechanics

Programme/specialisation: Physiotherapy / nursing and patient care

Type of training (full/part-time): full-time

Abbreviated name of subject: Biomechanics

Subject code in Neptun: EBTAAGYFT35A

Responsible organisational unit: Institute for Applied Health Sciences, Department of Physiotherapy

Programme director: Rita Kiss	**Position, title:** PhD, CSc, Dr.habil, assoc. prof
Teaching staff: László Bencsik	**Position, title:** lecturer
Number of hours / semester: 60	**ECTS credit points / semester: 2**

Role of subject in fulfilling the aim of training:
The goal of study is the summary of the biomechanical priciples of the human movement. By the end of the course, students should be able to describe the biomechanics of the human movement, and to understand the results of the motion analysis and their their adaptations to immobilisation and overuse

Brief description of subject:

Data concerning course in semester

Semester	Contact theoretical hours	Contact practical hours	Contact practical demonstration hours	Individual hours	Total number of hours	Credit points	Number of consultation occasions
1.	12	12	0	36	60	2	4-8 occasions

Schedule of the course

Course content of theoretical lessons:
1-2 lectures: Scientific bases of biomechanics. History of biomechanics
3-4 lectures: Mechanical background
5-6 lectures: Human musculoskeletal system and their biomechanical properties
7-8 lectures: Type of motion. Different method for calculation of centre of gravity
9-10 lectures: Motion analysis methods
11-12 lectures: Different kinematical and kinetical parameter for description of human motion (upper and lower limb)

Course content of practical lessons:
1-2: Types of biomechanical examinations
3-4: In-vitro examination (mechanical properties of bone)
5-6: Simple in-vivo examination
7-8: Kinematical parameter of gait
9-10: Gait analysis at patients with different orthopedical problems
11-12: Equilibrium during standing (balance ability)

Schedule of consultations:
Teaching week: after the theoretical and practical lessons
Exam period: by email

Course requirements

Course prerequisites:
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Attendance requirements, maximum absences during a semester, extenuating circumstances, making up missed classes:

1. Total number of acceptable absences:
   6 theoretical and 6 practical lessons
2. Mode of certification:
   The absence does not need to be certified.
3. Mode of certifying acceptable absences:
   oral exam

Midterm assessment:

1. aim: base of signature
2. form: midterm test
3. method of assessment: 60% (18point and more) accepted
4. consequence: base of signature
5. number of midterm assessments 1
6. topics of midterm assessments subjects of first 6 lectures
7. expected date of midterm assessments. at 7th teaching-week
8. number/date/form of make-up midterm assessments: 1 at 9th teaching-week
9. number/date/form of corrections of midterm assessments: same time as the make-up midterm

Requirements of getting signature:
participation on the lectures, more than 60% of midterm test

Individual assignments:

1. form: written an 10-15 pages long report (homework)
2. time: end of semester
3. amount: 10-15 pages
4. evaluation: maximum 20 points
5. consequence: refusal the signature

Type of end of term assessment: (szigorlat, kollokvium, gyakorlati jegy, aláírás)

Form of evaluation:
exam-grade.
written exam 50p, midterm test 30p,report (10-15 pages) 20p
0-49: unpassed
50-61:passed
62-73: statisfactory
74-85: good
86-100: excellent

Prescribed professional practical work: *(demonstration practice, schedule, place)*
none

Course material, recommended text book(s), professional literature and supplementary reading(s)
Obligatory:
Nordin M**.,** Frankel V.H. Basic Biomechanics of the Musculoskeletal System**.** Lippincott Williams & Wilkins , 2001. 467 pages. ISBN: 0683302477

Supplementary:
Nigg, B.M., MacIntosh, B.R., Mester, J. Biomechanics and biology of movement. Human Kinetics, 2000. 468 pages. ISBN: 0736003312.

Material resource implications:
projector, presentation room

Subject-related professional results and research:
Edited 2 books, written more than 10 book-chapters, 150 articles, IF: 45,3, H-index: 9

Prepared by: Rita Kiss

Approved by Institute/Head of Department: ***(signature)***