COURSE DATA

Data Subject	
Code	34338
Name	Biomechanics and podiatric pathomechanics
Cycle	Grade
ECTS Credits	6.0
Academic year	2023 - 2024

Study (s)

Degree	Center	Acad. year	Period
1208 - Degree in Podiatry	Faculty of Nursing and Chiropody	2	First term

Subject-matter

Degree	Subject-matter	Character
1208 - Degree in Podiatry	11 - Biomechanics and pathomechanics of the lower limb	Obligatory

Coordination

Name	Department
BLASCO GARCIA, CARLOS	125 - Nursing
LEYDA PINEDA, ROSA MARIA	125 - Nursing
NIETO GIL, MARIA PILAR	125 - Nursing

SUMMARY

The subject " Biomecánica and patomecànica podiatric **(cod 34338)** " belongs to the module the IInd of the study plan of the degree in Chiropody, which is given in the first semester of the second course of the same one. The importance of this subject takes root in the fact that it has as aim value both the human march and the biped static position of the person, which implies that first they must be known and to identify the mechanisms that make the person possible to remain in position raised, that is to say, the anatomy to know muscle skeletal and how the action sinérgica of the muscular chains they do that the person could remain in foot and to walk, and in second, as fundamental element of the march, the characteristics must be known of the mobility of the joints involved in the above mentioned process, since they are the vertebral column in his set and the pelvis as central element of gravitation of the person, and finally the implication of the joints of the low extremities, which are the persons in charge of the horizontal despazamiento of the person: the joints of the hip, knee and ankle, as well as the rest of joints that compose the foot, last element this one directly responsible for the contact with the soil.

The importance of this set of described knowledge, it takes root directly in the later boarding of problems of support and biomecánicos on the part of the students as future professionals of the Chiropody. And it is that if the knowledge moves to the clinical area first, with the accomplishment of practices in the subject of Podiatric Integrated Clinic, and to the professional in second, when the students are already graduated, in Chiropody, most of the work comes given by the consultations on alterations in the supports of the foot, which generate first clinical symptoms - the pain that demonstrate those who the bosses suffer it-, and in I do again clinical signs - principally queratósicos-. The chiropodists and chiropodists, must be capable of giving solution to these problems of an effective and efficient way.

This subject, with an educational load of 6 credits ECTS (**150 hours of teaching) o**f obligatory character, claims and must authorize to the student body the acquisition of the necessary knowledge, both theoretical and practical, for the holistic boarding of the human body as static element and dinámicco. For it, not only it is important to know to the perfection the anatomy of the foot, but in addition it is necessary to to relate the foot to the rest of the kinetic chain, that is to say, there has to be known the knee, the hip and the back, since a good functioning of all these anatomical structures makes possible that the human being is standing up and moves correctly. And analogous, an evil functioning of anyone of these components reverberates directly in the opposite. For all this, the Biomecánica and Patomecánica Podológica it is necessary to to study taking the foot as an integral part of the body, relating his functioning to that of the rest of the body.

Under this theoretical frame, the study of this subject will make the detection possible from the foot, from the rest of the low extremity and from the hip and back, of any problem that interyields in the balance of the body.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

To deal this subject with the maximum utilization, it will be necessary that the student body has overcome before the subject of Anatomy, since it will provide the knowledge and sufficient skills to him to know the system skeletal muscle of the low member, and to authorize him to locate all the bony structures as well as his manipulation..

It will be interesting also that the pupil has dealed the subject of General Chiropody, corresponding to the second semester of the first course.

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1208 - Degree in Podiatry

- Know the basics of biomechanics and kinesiology. Support theories. Human gait. Structural alterations of the foot. Postural alterations of the locomotive system with an impact on the foot and vice versa. Instruments for biomechanical analysis. Gender perspective in the biomechanical analysis of walking.
- Aplicar los conocimientos de exploración a casos reales, diferenciando los valores clínicos normales en bipedestación, decúbito, estática y dinámica con los patológicos
- Desarrollar la habilidad de realizar estudios de la marcha humana, baropodometría electrónica y otros instrumentos de análisis, estableciendo valores de normalidad. Conocer la biomecánica así como los instrumentos de análisis aplicados en investigación.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

In agreement with exposed in the point corresponding to the summary of the subject, each of three competitions that are specified in the previous paragraph is directed to acquire a holistic and complete vision of the static and dynamic function of the human body. In I make concrete,

1**. C1**: the student body will have to be capable of identifying the bony structures and you will articulate of the body persons in charge of supporting the biped static position and of carrying out the dynamic function.

2. **C2**: the student body will have to be capable of applying the knowledge of exploration to royal cases, differentiating the clinical normal values in bipedestación, decubitus, statics and dynamics with the pathological ones.

3. **C10:** the student body will have to know and be able to use the new technologies as diagnostic complementary elements in biomecánica and patomecánica. In I make concrete, it will have to be capable of deciding the need to realize a study of the pressures in statics and dynamics and of estabilometría, as well as to be able to realize the later analysis of the obtained results and his therapeutic interpretation.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	42,00	100
Laboratory practices	16,00	100
Tutorials	2,00	100
Attendance at events and external activities	5,00	0
Development of group work	15,00	0
Development of individual work	20,00	0
Study and independent work	10,00	0
Readings supplementary material	10,00	0
Preparation of evaluation activities	10,00	0
Preparing lectures	10,00	0
Preparation of practical classes and problem	5,00	0
Resolution of case studies	2,50	0
Resolution of online questionnaires	2,50	0
TOTAL	**150,00**	

TEACHING METHODOLOGY

The methodology that must follow to give the theoretical content that understands the modules I to the VIIth of the subject will be the magisterial participative class.

The professorship will expose the topic and it is it will combine with the active participation of the students in the same one as this one is acquiring the precise knowledge.

I

In the module the IXth dedicated to the practices of laboratory, the topics will be explained first by the professorship.

After this explanation, the students will divide in groups of two persons under the supervision of the professorship and will carry out the practice.

For it, one will possess the suitable material.

At the end of each practice students will be evaluated.

EVALUATION

Theoretical contents: 80 % (8 points)

There will be 2 exams, 1 for each teacher of theory. Each exam will have 5 questions to resolve. The student only has to answer 4 questions.

No final punctuation will be modified after the correction. The only exceptions will these: there's a mistake in the suma. In the revision, only advices to improbe de next exam will be done.

Each question will have a maximum of 1 point. The minimum score for each part is 2 points. Any of the two scores with less punctuation will have to be repeated in the second exam.

More than 10 spelling mistakes in the 2 exams will suppose the loss of 2 (two) points on the final note once added the theoretical and practical evaluations. In the case the sum of both examinations exceeds 20 mistakes it will not be able to be corrected. And in the case the written content is not understood also it will not be able to be corrected. In these last two cases the exam will pass to the second evaluation. And if the second evaluation give the same case the exam will be able to be suspended definitively. For Erasmus students this spelling mistakes will be adapted.

Laboratory practices: 20 % (2 points)

At the end of each practice the student will be examined. This examination may be done by the teacher directly according with the development of the student or with the accomplishment of the pertinent exploration by the student.

If a student has not pass any part of the exam (theory or practice), the student will have only do the failed exam in the second time again. Any partial score will be save for the next course.

CRITERIA FOR THE CALIFICATION OF HONOR SCORE: criteria of the Universidad de Valencia will be took in account according to the teacher's criteria depending of the evolution and work of the student in the course.

REFERENCES

Basic

- Michaud, T. C. Foot Orthoses and Other Forms of Conservative Foot Care. Newton Massachusetts. 1997.
- Valmassy, R. L. Biomechanics of the lower extremity. Mosby. 1996.
- Munuera, P. V. El primer radio: biomecánica y ortopodología. Santander: Exa Editores. 2009.
- Root, Menton L. Función normal y anormal del pie. Barcelona: Base. 2012.
- Kirby, K. Biomecánica del Pie y la Extremidad Inferior IV: Artículos de Precision Intricast, 2009-2013.
- Whitney, A.Taxonomía Triplanar de las Deformidades del Pie y de la Extremidad Inferior.

Additional

- Revista 1 Journal of American Podriatric Medical Association (JAPMA).
www.japmaonline.org

Revista 2: Journal of the American College of Orthopedics Foot & Ankle Orthopaedic & Medicine (The Foot).
https://www.journals.elsevier.com/the-foot

Revista 3: Podiatry Today
www.podiatrytoday.com

Revista 4: Revistapodologia.com
www.revistapodologia.com

Revista 5: Revista Española de Geriatría y Gerontología
http://www.elsevier.es/es-revista-revista-espanola-geriatria-gerontologia-124

Revista 6: El Peu
http://www.podocat.com/Revistes#the_foot

Revista 7: Revista Española de Podología
https://www.revesppod.com

Revista 8: Revista internacional de ciencias podológicas
https://revistas.ucm.es/index.php/RICP