**ACADEMIC DISCIPLINE OVERVIEW**

1. **Program data**

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| **1.1.** | **GRIGORE T. POPA UNIVERSITY OF MEDICINE AND PHARMACY IASI** |
| **1.2.**  | **FACULTY OF MEDICAL BIOENGINEERING**  |
| **1.3.** | **PROGRAMME:** Physio-kinetotherapy and rehabilitation |
| **1.4.**  | **STUDY FIELD:** Health |
| **1.5.** | **STUDY CYCLE**: UNDERGRADUATE |
| **1.6.** | **STUDY PROGRAMME:** INENGLISH |
| 1. **Subject data**
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| **2.1.** | **Subject: Orthotic and prosthetic techniques**  |
| **2.2.** | **Module leader: Lecturer Maria Daniela Vlad, Ph-D** |
| **2.3.** | **Seminar leader: Lecturer Maria Daniela Vlad, Ph-D** |
| **2.4. Year of study** | **II** | **2.5. Semester in which is taught** | **I** | **2.6. Evaluation type** | colloquium | **2.7. Subject status** | Mandatory/D.S.  |

1. **Estimated total time (hours/semester of didactic activity)**

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| **3.1.Number of hours / week** | 2 | **3.2. Courses number of hours / week** | 1 | **3.3. practical classes** | 1 |
| **3.4. Total number of learning hours** | 28 | **3.5. Courses** | 14 | **3.6. practical classes** | 14 |
| **3.7. Distribution of the available time** | Hours |
| **Study based on the manual, lecture support, bibliography and hand notes** | 14 |
| **Supplementary documentation in the library, using specialized platforms via internet and by field work** | 4 |
| **Preparation for seminars / practical classes, study themes, reviews, portfolio, and essays** | 4 |
| **Tutorship** | 2 |
| **Examinations** | 2 |
| **Other activities** | - |
| **3.8. Total hours of individual study** | 22 |
| **3.9. Total hours pes semester** | 50 |
| **3.10. Number of credits** | 2 |

1. **Preconditions (where applicable)**

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| **4.1.** of curriculum | Anatomy, Physiology, Methods of exploration and assessment in medical rehabilitation. |
| **4.2.** of competences | To know the macroscopic and microscopic structure of organs and systems of the body. To know the techniques of exploration / assessment of the functionality of the human body |

1. **Conditions (where applicable)**

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| **5.1.** for lectures | Video logistic support |
| **5.2.** for seminars / practical classes | The students will have the appropriate equipment. |

1. **Specific competences acquired**

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| Professional competences (expressed as knowledge and abilities) | C6.1 To identify the principles of manufacturing and application of orthoses, prostheses and other medical devices. C6.2 To explain the opportunity of choosing the type of orthosis, prosthesis or other medical devices, as well as to identify the techniques of occupational therapy adapted to the malfunction |
| Transverse competences (of role, of professional development, personal) | To identify the objectives to be achieved, the resources available, conditions for their completion, work stages, working time, related timescales for achievement and related risks To identify the roles and responsibilities in a multidisciplinary team and to apply the techniques of networking and effective work within the team and in relation with the patient |

1. **Objectives of the study discipline (according to the grid of specific competences acquired)**

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| **7.1.** General objective | General and specialized knowledge in the field of spinal and orthopedic prosthetics and orthotics enabling the understanding, analyzing and designing new applications in this field |
| **7.2.** Specific objectives | To familiarize with the professional activities carried out in the field of orthotics and prosthetics.  |

1. **Contents**

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| **8.1. Lecture** | **Teaching methods** | **Observations** |
| General aspects of spinal and orthopedic orthotics; | Power Point presentation | 2 hours |
| Orthotics of vertebral column; | 2 hours |
| Orthotics of upper limb; | 2 hours |
| Orthotics of lower limb; | 2 hours |
| Introduction to joint prosthetics - History, definitions, types of arthroplasties; Basic characteristics of prosthetic structures; | 2 hours |
| Hip arthroplasty – Biomechanics, design of femoral components, design of acetabular components; | 2 hours |
| Prosthetics of the intervertebral space – Biomechanics, design of prosthetic components and implantology. Other types of arthroplasties. | 2 hours |
| **Bibliography****mandatory**1. **Ortezare – Protezare, suport curs** *(Orthotics - Prosthetics, course annex)* **–** P. Botez,available for the subject;

**selective**1. **Artroplastia protetică de şold - editia a II a** *(Hip prosthetic arthroplasty - second edition)*, P. Botez,Venus Publishing House, Iasi, 2007, ISBN 978-973-756-069-8.;
2. **Artroplastia protetică de şold - editia a III a**  *(Hip prosthetic arthroplasty - third edition)* (revised and extended), P. Botez,Venus Publishing House, Iasi, 2008, ISBN 978-973-756-077-3.
3. **Ortopedie – editia a II a**, *(Orthopaedics - second edition)* **P.Botez,** Venus Publishing House, Iasi, 2008, ISBN 978-973-756-075-9;
4. **Tehnici avansate si biomateriale in ortopedie (Vol I)** *(Advanced techniques and biomaterials in orthopaedics (Volume I))*, Paul Botez, Paul Dan Sirbu, Luminita Simion, Florin Munteanu, Tudor Petreus, „Gr. T. Popa”, UMF Iaşi Publishing House, 2008 – *in the wording of Paul Botez,* ISBN 978-973-7682-64-2, ISBN 978-973-7682-69-7;
5. **Biomecanica aparatului locomotor (Vol. I)** *(Biomechanics of the locomotor system (Volume I))*, Florin Munteanu, Paul Botez,Venus Publishing House, 2006 ISBN 973-756-023-X.
6. **Neurochirurgie şi elemente de bioinginerie neurochirurgicală.** *(Neurosurgery and elements of neurosurgical bioengineering)* I Poeată, Tehnica Info Publishing House, Chisinău 2000.
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| **8.2. Seminar / practical classes** | **Teaching methods** | **Observations** |
| Introduction to spinal implantology and prosthesis. Spinal implants. | Presentation of the paper, description and assessment of practical examples. Presentation of the conclusions. | 2 hours |
| Presentation of principles of spinal orthotics; Orthoses for the vertebral column. | 2 hours |
| Presentation of principles of orthopedic orthotics; Orthoses of the upper limb; | 2 hours |
| Presentation of principles of orthopedic orthotics; Orthoses of the upper limb; | 2 hours |
| Introduction to orthopedic implantology and prosthesis; Hip prosthesis and implantology - general; | 2 hours |
| Main types of hip arthroplasty; Management of the patient with hip implant; | 2 hours |
| Knee prosthesis and implantology - general; Main types of knee arthroplasty; Management of the patient with knee implant. | 2 hours |
| **Bibliography****mandatory**1. **Ortezare – Protezare, suport curs** *(Orthotics - Prosthetics, course annex)* **–** P. Botez,available for the subject;

**selective**1. **Artroplastia protetică de şold - editia a III a**  *(Hip prosthetic arthroplasty - third edition)* (revised and extended), P. Botez,Venus Publishing House, Iasi, 2008, ISBN 978-973-756-077-3.
2. **Ortopedie – editia a II a**, *(Orthopaedics - second edition)* **P.Botez,** Venus Publishing House, Iasi, 2008, ISBN 978-973-756-075-9;
3. **Tehnici avansate si biomateriale in ortopedie (Vol I)** *(Advanced techniques and biomaterials in orthopaedics (Volume I))*, Paul Botez, Paul Dan Sirbu, Luminita Simion, Florin Munteanu, Tudor Petreus, „Gr. T. Popa”, UMF Iaşi Publishing House, 2008 – *in the wording of Paul Botez,* ISBN 978-973-7682-64-2, ISBN 978-973-7682-69-7;
4. **Neurochirurgie şi elemente de bioinginerie neurochirurgicală.** *(Neurosurgery and elements of neurosurgical bioengineering)* I Poeată, Tehnica Info Publishing House, Chisinău 2000.
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1. **Correlation of the discipline contents with the expectations of the epistemic community, professional associations, and representative employers from the afferent program field**

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| Knowledge and abilities are established as didactic objectives and specified as such in the analytic programs that are revised yearly. After their analysis by the study discipline staff, these are discussed and approved in the Curricular Committee, towards curricular harmonization among the various study disciplines. Along this entire process systematic evaluation is performed, directly if possible, regarding the correspondence of the contents to the expectations of the academic community and of the representatives of the social community, professional associations, and employers. |

1. **Evaluation**

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| **Type of activity** | **Type of activity** | **Evaluation methods** | **Contribution to the final grade** |
| **Lecture** | Acquiring the theoretical notions and aspects presented in the course  | Written test | 50% |
| **Seminar/practical classes** | Theme of laboratory works | Oral exam | 40% |
| Assessing the activity carried out throughout the year | Verification and grading the works / projects | 10% |
| **Minimal performance standard:**Minimum passing condition: To know the main types of orthopedic orthoses and for the vertebral column: definition, classification, description, mechanism of action, function and indications. To know the main types of prostheses and prosthetic techniques. |

**Date: Signature of head of discipline**

20.09.2019 Lecturer Maria Daniela Vlad, Ph-D

**Department approval date**

30.09.2019

 **Signature of department director**

Lecturer Daniela-Viorelia Matei, Ph-D