HEALTH STUDIES DEPARTTMENT

# The Specialist Graduate Preventive Physiotherapy Program

EQF Level 7- Second Cycle - ISCED (Master's Degree)

*September 2025*

# CONTENTS

# THE SPECIALIST GRADUATE PREVENTIVE PHYSIOTHERAPY STUDY

The specialist graduate Preventive Physiotherapy program, made with the goal of educating highly skilled physiotherapists educated and motivated to work with a growing number of people who do sports in Croatia, as well as the users of recreational and wellness programs that demand a clinical approach to physiotherapy and a flexible support to the advancement of work capacities. After completing the Preventive Physiotherapy specialist graduate program, students will be qualified to organize, analyse and research models of physiotherapy application in sports, recreation and wellness. With the title of graduate Physiotherapist students are qualified for and capable of independent work in health institutions, rehabilitation centres, professional sports clubs, recreational centres, educational institutions, wellness centres, and other health and tourist organizations, as well as expert and scientific projects or research in the field of physiotherapy.

Level: Specialist Graduate Professional Study

Title awarded upon completion: Master of Physiotherapy

Duration of the study programme: II- academic year (4 semester)

Total ECTS credits: 120

# ACADEMIC CALENDAR

**Academic year: October current year – 30th September -next calendar year**

**WINTER SEMESTER**

| | |
|---|---|
| Lectures | October,– February, |
| Winter Exams | February , March , |
| Additional exams | November– December – for earlier semester finished students |
| Christmas' holiday | December 24, – January 7, |

**SUMMER SEMESTER**

| | |
|---|---|
| Lectures | March – June |
| Summer Exams | June– July |
| Autumn Exams | August– September |
| Additional exams | April–May – for earlier semester finished students |
| Dean's exam period | September – according rules |
| Easter holidays | April |

**Summer vacation: end of July – end of August**

Please note that faculties are allowed to change/adjust the academic calendar according to their internal processes!

So consult also the faculty web page for more detailed information on this.

**National Holidays**

| | |
|---|---|
| January 1 | New Year's Day |
| January 6 | Three Kings Day |
| March 31, April 1, | Easter Sunday and Monday |
| May 1 | Labour Day |
| May 30 | Statehood day |
| June 8 | Corpus Christi |
| June 22 | Anti-Fascist Struggle Day |
| August 5 | Victory and Homeland Thanksgiving Day |
| August 15 | Assumption of Mary |
| October 8 | Independence Day |
| November 1 | All Saints' Day |

| | |
|---|---|
| November 18 | National Holiday - Remembrance Day for all victims of the Homeland War |
| December 25 -26 | Christmas Day and St. Stephen's Day |

## CROATIAN HEI GRADING SYSTEM

The Croatian national grading system consists of five grades with numerical equivalents, from highest to lowest grade as follows:

- Excellent (izvrstan) – 5
- Very good (vrlo dobar) – 4
- Good (dobar) – 3
- Sufficient (dovoljan) – 2 Note: minimum pass grade
- Fail (nedovoljan) – 1 Note: requires student to retake exam/resubmit work

Notification: Learning outcomes for Professional trainings courses are recorded as P – Passed (non-graded assessment) and ECTS credits.

**Croatian Higher Education System  for more info.**

**Link  for list of courses available per semester and ECTS credits.**

**Link  for learning outcomes.**

## LIST OF COURSES AVAILABLE TO INCOMING STUDENTS IN ENGLISH

## integrated/practical

Courses offered in English are available either in an integrated format or through practical instruction. Additional courses from the previous s list are arranged upon agreement with the respective course instructor and are delivered through consultative teaching.

| *Class name* | *ECTS credits* | Class Mode (T/I/P)* | ISVU Code | Semester |
|---|---|---|---|---|
| **Exercise and Health** | 3 | I | 238618 | 1 autumn/winter |
| **Sports and Recreational Medicine** | 3 | I | 238619 | 1 autumn/winter |
| **Psychodynamics of Sports and Exercise** | 3 | I | 238622 | 1 autumn/winter |
| **Functional Anatomy and Biomechanics of Sports Injuries** | 4 | I | 238623 | 1 autumn/winter |
| **Physiology of Sports and Exercise** | 4 | I | 238624 | 1 autumn/winter |
| **Physiotherapy in Sports and Recreation II** | 5 | I | 238626 | 2 spring/summer |
| **Physical Preparation in Medical Conditions** | 5 | I | 238627 | 2 spring/summer |
| **Diagnostics in Sports Physiotherapy and Rehabilitation** | 5 | I | 238630 | 2 spring/summer |
| **Research Methodology in Physiotherapy** | 5 | I | 251931 | 3 autumn/winter |
| **Prosthetics and Orthotics in Sports Physiotherapy** | 5 | I | 251933 | 3 autumn/winter |
| **Abuse of Medication in Sports** | 3 | I | 251935 | 3 autumn/winter |
| **Alternative Methods in Sports, Recreation and Wellness** | 5 | I | 251938 | 4 spring/summer |
| **Legal regulation in sports and healthcare** | 3 | I | 251939 | 4 spring/summer |
| **Selected Topics from Sports Medicine and Physiotherapy** | 3 | I | 251940 | 4 spring/summer |

## *Explanation of Teaching Methods for Long-Term Student Mobility (Studies)

*(for use in the course catalogue from which Learning Agreement information is entered)*

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## T – Theoretical Consultative (course delivered in English)

- **Description:**
  Individual or group consultative teaching conducted in English, intended exclusively for incoming international students. Consultative lectures focus on providing explanations and guidance regarding theoretical content.
- **Content:**
  Primarily theoretical lectures and discussions with the professor, with the possibility of written and/or oral assignments.
- **Note:**
  No regular classes with local students. It is possible to choose courses offered in all semesters. The format and schedule are flexible and based on individual arrangements with the course instructor.

  The mobility period may be shorter than the full semester (e.g., 3 months), but **must** include the **examination period**. Therefore, a later arrival than the official semester start is acceptable, but the student must stay through to the end of the semester, including exams.

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## I – Integrated (course taught in Croatian with additional explanation in English)

- **Description:**
  Participation in regular classes with local students, taught in Croatian, with additional explanations provided in English when necessary. This includes academic lectures and exercises.
- **Content:**
  Theoretical lectures or a combination of lectures and practical exercises. Students may complete assignments and projects in English.
- **Note:**
  Classes are held according to the regular timetable during the semester in which the mobility takes place. A higher level of independence and readiness to follow content in Croatian is required, with support from the lecturer.
- **Language preparation:**
  Croatian – minimum recommended level: **A2**
  Language support is available online via EU Academy:
  Learn Croatian with OLS
- **Mobility duration:**
  Full semester – includes both teaching period and examination period.

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## P – Practical (practical training)

- **Description:**
  Practical work or exercises only, such as laboratory work, professional placements,

or fieldwork.
May include: practical training, practical exercises and activities, work placement, or field practice.

- **Content:**
  Active participation in practical activities, with basic guidance provided in the agreed language (Croatian or English, as specified in the Learning Agreement). Placements may occur outside the institution, in partner organizations or external training facilities.
- **Format:**
  Offered as a structured programme or arranged individually upon request.
- **Note:**
  Practical work is carried out according to a previously agreed schedule. Communication with mentors, task execution, and reporting are conducted in English.
- **Mobility duration:**
  To be determined based on individual arrangements.

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## Important:

All listed models represent different formats of teaching during mobility. However, **student workload (ECTS credits) and mobility duration** are fully aligned with **validated syllabi and official curricula**. This ensures that the structure and intensity of learning activities follow formal academic standards, enabling the transparent recognition of learning outcomes in line with **Erasmus+ and ECTS guidelines**.

## CONTACT INFORMATION

### *ECTS COORDINATORS/ the host of the department:*

Slavica Janković, Ph.D., Professor of Professional Studies

slavica.jankovic@vevu.hr

ECTS Coordinator – The person responsible for coordinating the SMS mobility program. This includes approving proposed SMS Mobility Plans for incoming students, as well as approving Learning Agreements and any course modifications during the mobility period.

### INCOMING TRAINEEHIP STUDENTS SUPERVISORS/the host of the department:

Vesna Šeper, Ph.D. in Physical Education and Sport, Professor of Professional Studies

vesna.seper@vevu.hr

Supervisor – The person responsible for coordinating the SMT mobility program. This includes approving proposed SMT Mobility Plans for incoming students, as well as approving Learning Agreements and any traineeship modifications during the mobility period.

***LIST OF LECTURERS*** **LINK.**

## CLASS DESCRIPTION AND LEARNING OUTCOMES ON THE CLASS LEVEL

### *Year I.*

### *First semester*

| **Course name** | **Exercise and Health** |
|---|---|
| **Prerequisites for enrolling in class** | |
| **Course contents** | |
| Course contents is as follows:<br>1. Physical activity as a lifestyle<br>2. Physical activity and health<br>3. Physical activity and risk of chronic diseases<br>4. Physical activity and mental health<br>5. Aerobic capacity<br>6. Effects of aerobic training<br>7. How to improve aerobic capacity<br>8. Muscular abilities<br>9. How to improve muscle skills<br>10. Nutrition and health<br>11. Energy balance<br>12. Nutrition activity and weight control<br>13. Principles of training | |
| **Learning outcomes of the course** | |
| After adopting the content of the course, students will be able to:<br>1. Measure basic parameters related to cardiorespiratory endurance and muscle strength,<br>2. Based on the measured, assess the current state of the subject,<br>3. Choose effective methods for improving health status,<br>4. Recommend physical activity. | |

| Course name | Sports and Recreational Medicine |
|---|---|
| Prerequisites for enrolling in class | N/a |

**Course contents**

1. Introductory lecture: biomedical aspects of participation in physical activity
2. Beneficial effects of regular physical activity and harmful effects of physical inactivity
3. Social and public health importance of physical activity and inactivity
4. The role of the physiotherapist in the interdisciplinary team within the field of sports and recreational medicine
5. Prevention of sports injuries and damage and overtraining
6. Treatment and rehabilitation of sports injuries and damages
7. Sports and health testing of athletes and recreationists and doping control
8. First aid in sports and incident prevention,
9. Guidelines for physical activity of adults
10. Guidelines for physical activity in children and young people
11. Guidelines for physical activity in special populations

Design and evaluation of physical activity programs for different user groups.

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Evaluate the role of physical activity in health promotion and disease prevention,
2. To justify the role of the physiotherapist in the interdisciplinary team within the field of sports and recreational medicine,
3. Predict endogenous and exogenous factors of sports injuries, overexertion and overtraining syndromes, as well as their prevention measures and basic principles of treatment,
4. To compare the basic procedures of functional sports diagnostics and health examinations in athletes, recreationists and inactive population,
5. Determine the necessary measures for applying first aid on the sports field,
6. Assess the importance of doping control at sports competitions,
7. Evaluate different forms of health supervision and the methodology of health examination of athletes and recreationists,
8. Predict the dose dependence of exercise and health effects when prescribing the correct dose of physical activities in accordance with the indications and needs of the user.

| **Course name** | **Physiotherapy in Sports and Recreation I** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. Principles of physiological reactions of muscles to exercise
3. Principles of physiological muscle reactions to injury
4. Therapeutic exercises for injuries
5. Potentially serious symptoms and signs during exercise after injuries
6. Complications of muscle injuries
7. Assessment and creation of a therapeutic program
8. Paths of pain
9. Physiotherapy in the treatment of muscle and tendon injuries
10. Indications and contraindications for the use of electroanalgesia
11. Indications and contraindications for the application of superficial thermotherapy
12. Hydrotherapy

Characteristics of the application of therapeutic ultrasound in soft tissue injuries in combination with other modalities in physiotherapy.

**Learning outcomes of the course**

After successfully completing the course, students will be able to::

1. Assess the state of the basic functional patterns of movement and structure within the framework of physiotherapy assessment in athletes,
2. Choose from different options the most adequate physiotherapy procedures after a sports injury with the aim of creating a therapeutic program,
3. Critically judge the effects of performed physiotherapy procedures through tests and measurements,
4. Argue the reason and method of applying a certain physiotherapy procedure after a sports injury,
5. Critically judge the effects of applied therapy, as well as unwanted effects and complications during physiotherapy.

| **Course name** | **Psychodynamics of Sports and Exercise** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. Defining the psychology of sport and exercise, history of psychodynamics of sport
3. Personality and sport, motivation for achievement, alienation, stress and anxiety
4. Competition and cooperation, feedback, support, motivation, group and team dynamics
5. Group cohesion and factors related to cohesion
6. Communication and confrontation
7. Introduction to psychological skills training
8. Regulation of arousal
9. Visualization in sports and exercise
10. Self-confidence
11. Exercise and psychological well-being
12. Special behaviors and exercise addiction
13. Sports injuries and psychodynamics
14. Burnout and overtraining

Aggression in sports, psychology of an active child.

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Determine the influence of psychological preparation on sports performance,
2. To justify the role of motivation in sports,
3. Predict the importance of psychological support for athletes and people who exercise,
4. Evaluate the role of the coach and the role of the team leader on athletes.

| **Course name** | **Functional Anatomy and Biomechanics of Sports Injuries** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |
| **Course contents** | |
| 1. Introductory lecture<br>2. Introduction to biomechanics<br>3. Foundations of posture, balance and walking<br>4. Functional anatomy of running and jumping<br>5. Functional anatomy of throwing and lifting<br>6. Functional anatomy of kicking<br>7. Analysis of exercise and sports movements<br>8. Overview and classification of sports injuries<br>9. Biomechanics of upper extremity injuries<br>10. Biomechanics of lower extremity injuries<br>11. Biomechanics of head, neck and trunk injuries<br>Biomechanical tools in prevention and rehabilitation. | |
| **Learning outcomes of the course** | |
| 1. Analyze the technique of performing exercises for individual parts of the locomotor system,<br>2. Recommend corrections to training processes,<br>3. Design a rehabilitation program after a sports injury,<br>4. Classify sports injuries. | |

| **Course name** | **Physiology of Sports and Exercise** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Homeostasis and steady state – dynamic balance
2. Basics of exercise metabolism
3. Exercise and the cardiovascular system
4. Respiratory system and exercise
5. Muscle fibers - structure, contraction, typification
6. Neuromuscular aspects of movement
7. Principles of training and adaptation
8. Mechanisms of muscle fatigue
9. Physical inactivity (detraining) and adaptations
10. Physical activity and environmental factors
11. Analysis of body structure and composition in sports and exercise
12. Functional testing in sports and exercise
13. Performing measurements to determine body dimensions and structure
14. Field and laboratory tests of aerobic and anaerobic ability
15. Analysis of blood metabolites in training programming

Determining exercise loads by direct and indirect methods.

**Learning outcomes of the course**

After successfully completing the course, students will:

1. Acquire the skills of interdisciplinary and multidisciplinary professional work with all population groups (healthy population, recreational, amateur and professional athletes, special groups) participating in exercise and sports,
2. Know how to plan the training process based on individual morpho-functional and physiological parameters, in order to optimize exercise performance and manage the effects of training,
3. Explain physiological reactions after physical activity, to fatigue, overtraining and other changed physiological conditions,
4. Identify basic points in physiological processes for possible intervention by physiotherapists,
5. To acquire the basic skills of measurement and interpretation of the results of the measurement of various physiological parameters.

| **Course name** | **Physiotherapy in professional sports I** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. Rights and obligations of physiotherapists in professional sports
3. The role and importance of the physiotherapist within the sports team
4. The most common injuries in professional sports
5. Initial physiotherapy examination of the injured segment and establishment of a physiotherapeutic diagnosis
6. Outpatient physiotherapy examination of the injured segment and definition of the treatment plan and program
7. Designing a complete rehabilitation program
8. Physiotherapy examination and testing of ankle and knee joints, and their active and passive stabilizers
9. Physiotherapy examination of the hip joint and its active and passive stabilizers
10. Physiotherapy examination and intervention after muscle injuries
11. Prevention of sports injuries
12. Bandaging of the lower extremities
13. Treatment and repair of injuries on the sports field

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Choose the best way to treat sports injuries,
2. Create rehabilitation programs for a specific sports injury,
3. Detect and prevent sports injuries in time,
4. Critically judge proposed physiotherapeutic procedures or activities,
5. Design and organize adequate treatment of athletes within the sports collective,
6. Find out which injury it is exactly, and devise an adequate treatment for that patient.

## *Second Semester*

| **Course name** | **Physiotherapy in Sports and Recreation II** |
|---|---|
| **Prerequisites for enrolling in class** | **Attended course: Physiotherapy in Sport and Recreation I.** |
| **Course contents** | |
| 1. Specifics of the physiotherapy process in the evaluation of sports injuries<br>2. Tests and questionnaires in the evaluation of sports injuries<br>3. Physiotherapy interventions for sports injuries in the acute, subacute and chronic phase (potential serious signs and symptoms during exercise, and selection of the appropriate type of exercise)<br>4. Application of magnets in sports and recreation injuries (indications and contraindications)<br>5. Principles of electrostimulation<br>6. Indications and contraindications for laser application<br>7. Indications and contraindications for shock wave application<br>8. Application of natural healing factors in the treatment of injuries and damage to the movement system | |
| **Expected learning outcomes of the course** | |
| After successfully completing the course, students will be able to:<br>1. Rank sports injuries,<br>2. Assess a sports injury,<br>3. Choose physiotherapy interventions for sports injuries,<br>4. To judge the effects of physiotherapy interventions. | |

| **Course name** | **Physical Preparation in Medical Conditions** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |
| **Course contents** | |
| 1. Introductory lecture<br>2. Structure and function of the muscular, neuromuscular, circulatory and respiratory systems during fitness training<br>3. Bioenergetics of special group training<br>4. Endocrine responses to strength training in affected individuals<br>5. Adaptations to anaerobic fitness training<br>6. Specific adaptations to aerobic fitness training<br>7. Warming up and stretching<br>8. Strength and technique training for the affected population<br>9. Plyometric training for osteoporosis and sarcopenia<br>10. Periodization of conditioning of special groups<br>11. Rehabilitation and reconditioning<br>Exam | |
| **Learning outcomes of the course** | |
| After successfully completing the course, students will be able to:<br>1. Critically analyze the principles of application of fitness training methodology in medical conditions,<br>2. Assess the risks of a sedentary lifestyle for the occurrence of frequent chronic diseases today,<br>3. Create an exercise plan and program for people suffering from chronic diseases,<br>4. Differentiate the mechanisms of adaptation to fitness exercises in people with different diseases,<br>5. Choose optimal exercises for the development of aerobic abilities and strength of people with chronic diseases. | |

| **Course name** | **Rehabilitation of Locomotor System Injuries** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. Injuries of the locomotor apparatus (muscles, bones, ligaments, tendons)
3. Mechanism and etiology of injuries
4. Sports and protective equipment
5. Principles of treatment and treatment for the upper part of the body: shoulder and upper arm; elbow; forearm, wrist and hand; back; head and torso
6. Principles of treatment and treatment for the lower extremities: groin and upper legs; shins; article; foot
7. Principles of treatment of different age groups, including children and adolescents
8. Extreme environments
9. Special activities
10. Main risk factors
11. Training and exercise
12. Rehabilitation

**Learning outcomes of the course**

By mastering the content of the course, students will be able to:

1. Choose physiotherapy procedures and methods depending on the type of locomotor system injury according to European quality standards
2. Evaluate the physiological effects of exercise in different age groups with the aim of improving health
3. Choose the most adequate treatment methods for characteristic sports injuries according to the specifics of injury rehabilitation
4. Valorize the results of the physiotherapy assessment, the effects of the applied physiotherapy procedures and possible complications during the physiotherapy as well as the recovery itself
5. Assess risk factors in different sports
6. Argue the importance of conducting research and introducing innovative practices based on evidence.

| **Course name** | **Wellness Programmes** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. Health and self-responsibility for health
3. Wellness and breathing. Wellness and senses
4. Wellness and movement,
5. Wellness and work
6. Wellness and nutrition
7. Wellness and thinking
8. Wellness and communication. Wellness and finding meaning
9. Elements of the rehabilitation wellness process - assessment of the client's status, education, action, evaluation
10. Wellness programs – types, principles and organization

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Assess the benefits of applying the wellness program,
2. Argument the opinion about the effectiveness of the application of wellness,
3. Valorize the effects of performed therapeutic procedures,
4. Integrate theoretical knowledge with practice in the application of the wellness program.

| **Course name** | **Diagnostics in Sports Physiotherapy and Rehabilitation** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. Basic principles and concepts
3. Administration of diagnostic procedures
4. Integration of functional testing into everyday practice
5. Anthropometric measurements. Estimation of muscle length
6. Assessment of functional mobility
7. Assessment of the ability to establish and maintain balance
8. Assessment of aerobic capacity
9. Assessment of muscle strength and power
10. Assessment of speed and agility
11. Tests and protocols for assessing the functional status of the upper body
12. Tests and protocols for assessing the functional status of the hull
13. Tests and protocols for the assessment of the functional lower part of the body

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Propose the principles of operation and application of basic instrumentation in various diagnostic procedures,
2. Determine the appropriate procedure for different problems/goals and, based on the conducted testing, perform the necessary measurements
3. To recommend the most adequate method for measuring the functional status of persons participating in sports, recreation and wellness,
4. Critically judge the value and significance of the relevant literature, based on the knowledge obtained during the course of the examination, whether certain diagnostic procedures and tests are based on verified application in practice,
5. Evaluate the physiological effects of exercise and physical activity on different age groups,
6. Valorize the results of physiotherapy assessment (through testing and measurements), the effects of applied therapy, and unwanted effects and complications during the implementation of physiotherapy in sports, recreation and wellness,
7. They review the benefits and risks of appropriate diagnostic procedures in relation to the type of problem, gender and age.

| **Course name** | **Clinical Practice I** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Basic elements of physiotherapy assessment before starting a physical exercise program
2. Information on health status and assessment of risk factors
3. Physical components of the examination
4. Testing of health fitness levels
5. Interpretation of the results of the physiotherapy assessment
6. Characteristics of athletes with special needs
7. Application of first review skills
8. Mechanics and classification of sports injuries, topography of injuries
9. Field inspection
10. Physiotherapy evaluation of athletes with an acute injury
11. Functional status of the injured athlete
12. Documenting the review
13. Recognition of injuries of the upper extremity, recognition of injuries of the lower extremity
14. Recognition of head and neck, spine and chest injuries

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Assess the functional status of injured athletes, athletes before starting a physical exercise program, including athletes with special needs, as well as athletes after an acute sports injury
2. Critically judge the results of the physiotherapy assessment of the functional status of an injured athlete, athletes before starting a physical exercise program, athletes with special needs as well as athletes after an acute sports injury
3. Argue the reason and method of application of the applied physiotherapy assessment
4. Defend the position related to the reason and method of application of a certain physiotherapy assessment
5. Determine injuries of the upper and lower extremities, injuries of the head and neck, spine and chest.

# Elective courses of the first year of study

| **Course name** | **Anthropomotorics** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |
| **Course contents** | |
| 1. Introduction to anthropomotorics<br>2. Principles of sports training<br>3. Periodization of sports training<br>4. Exercise methods<br>5. Basics of fitness training methodology<br>6. Training of functional abilities<br>7. Strength training<br>8. Speed training<br>9. Mobility flexibility training<br>10. Coordination and agility training<br>11. Precision training<br>12. Balance training | |
| **Learning outcomes of the course** | |
| After adopting the content of the course, students will be able to:<br>1. measure the basic load parameters,<br>2. choose the optimal training load,<br>3. create training sessions for different age groups,<br>4. valorize the results of the training cycle. | |

| **Course name** | **Balneoclimatology** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. Significance of balneoclimatology as a profession and science
3. Spa location
4. Medical conditions for the use of natural medicinal agents
5. Climate therapy
6. Balneotherapy. Classification of mineral waters
7. Classification of peloids
8. Characteristics of the port
9. Effects of medicinal spa agents
10. Therapeutic effects of hydrotherapy
11. The influence of the use of hyperthermia on the human body
12. Indications and contraindications for balneotherapy
13. Health and spa tourism

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Assess the benefits of applying balneoclimatological procedures,
2. Choose balneological procedures,
3. Argument the opinion about the effectiveness of applying balneoclimatological procedures,
4. Valorize the effects of the performed therapeutic procedures.

| **Course name** | **Nutrition in Sports, Recreation and Wellness** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. History of sports nutrition
3. Anatomy of the digestive system and digestion of food and liquids
4. Nutrients
5. Meal planning
6. Hydration strategy
7. Recommendations for protein and carbohydrate intake (g/kg) depending on the type of physical activity
8. Recommendations for increasing or decreasing body mass and the proportion of fat tissue
9. Dietary supplements
10. Nutrition for sports performed in extreme climatic conditions
11. Eating disorders

**Expected learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Explain the structure and function of the cell,
2. Analyze food intake, digestion and absorption,
3. Explain energy conversion and metabolism,
4. Describe the energy balance in the body,
5. Distinguish between aerobic and anaerobic metabolism,
6. Critically describe macronutrients and micronutrients.

| Course name | Promotion of Physical Activity in Childhood |
|---|---|
| Prerequisites for enrolling in class | N/a |

**Course contents**

1. Introductory lecture
2. Prevalence of physical activity among children and adolescents in Croatia and the world
3. Recommendations for the level and amount of physical activity of children and adolescents
4. The influence of physical activity on the health and proper development of children and adolescents
5. Socioeconomic factors affecting the level and amount of physical activity of children and adolescents
6. Assessment of the level and amount of physical activity in children and adolescents
7. Physical activity of healthy children and children with special needs and morbidities
8. Connection of physical activity of children and adolescents with healthy habits
9. Physical activity of children and adolescents with the aim of preventing postural changes and other morbidity
10. The role of the physiotherapist in the interdisciplinary team within the field of physical activity of children and adolescents

**Očekivani Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Evaluate the role of physical activity and exercise in health promotion and disease prevention in children and adolescents,
2. Assess the level and amount of physical activity of children and young people,
3. Choose the most adequate type of physical activity with regard to the individual approach to the user,
4. Critically judge the effects of the performed assessment and performed physical activity or exercise,
5. Argument an opinion regarding the reasons and methods of applying a certain type of physical activity
6. Evaluate different forms of physical activity and exercises related to children's health,
7. Justify the role of the physiotherapist in the interdisciplinary team within the field of physical activity and exercise for children and adolescents.

## *Year II.*

## *Third Semester*

| **Course name** | **Research Methodology in Physiotherapy** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |
| **Course contents** | |
| 1. Evidence-based medicine<br>2. Sources of information in the research and work of physiotherapists - the importance of methodological selection<br>3. Guidelines for the work of physiotherapists - sources, creation and assessment of methodological quality<br>4. Tools for assessing the methodological quality of scientific publications<br>5. Types of research, designs and scientific methods<br>6. The most common research instruments in physiotherapy<br>7. Sampling in physiotherapy research - possible deviations and most common mistakes<br>8. Collection of data in the research - methodological aspect and possibilities of deviating the results<br>9. Construction and validation of the research instrument<br>10. The most common errors in the processing and presentation of research results<br>11. Conclusion in scientific research<br>12. Ethical principles of scientific research<br>13. Dissemination of research results - importance for practice | |
| **Learning outcomes of the course** | |
| After successfully completing the course, students will be able to:<br>1. Critically judge the methodological quality of scientific and professional works,<br>2. Assess the methodological quality of the guidelines for the work of physiotherapists,<br>3. Rank different types of scientific and professional works according to the strength of the evidence,<br>4. Judge the evidence on the effectiveness of a certain physiotherapy therapy based on a search of the relevant literature,<br>5. Select methodologically quality research for use in research and practice,<br>6. Argue the importance of conducting research in the work of physiotherapists and introducing innovative practices based on scientific evidence in physiotherapy. | |

| **Course name** | **Emergencies in Sports and Recreation** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. The role of the sports physiotherapist in taking care of urgent medical conditions
3. Algorithms of emergency medical procedures on the sports field
4. Assessment of physical status, vital signs and first aid techniques (ABCDE approach)
5. Transport of injured and sick athletes
6. Cardiorespiratory emergencies in sports and recreation
7. Treatment of head and spine injuries in sports
8. Injuries of internal organs in sports
9. Acute infections, allergies and near emergencies in sports and recreation
10. Open wounds
11. Skin injuries in sports

**Learning outcomes of the course**

After taking the course, students will be able to:

1. Judge the severity of the injury on the field,
2. Assess the vital signs of the injured athlete,
3. Anticipate possible complications if the injured athlete returns to the game,
4. Critically judge the length of the athlete's recovery after injury,
5. Argue physiotherapy procedures when providing first aid.

| **Course name** | **Prosthetics and Orthotics in Sports Physiotherapy** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Individual prosthetic supply, prosthetic modules
2. Prosthetics and orthotics in sports physiotherapy
3. Applied anatomy and medicine of bandaging
4. Preparation and bandaging of the drumstick, prevention of complications
5. Use and removal of prosthetic and orthotic aids
6. Orthopedic insoles for the foot in sports and recreation and accompanying exercises
7. Upper leg, hip and pelvis prosthetics - prosthetic supply, prosthetic modules and physiotherapy
8. Knee prosthetics - prosthetic supply, prosthetic modules and physiotherapy
9. Foot prosthetics - prosthetic supply, prosthetic modules and physiotherapy
10. Prosthetics of the shoulder girdle and upper arm - prosthetic supply, prosthetic modules and physiotherapy
11. Prosthetics of the forearm and hand - prosthetic supply, prosthetic modules and physiotherapy
12. The role of the physiotherapist in patient education

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Assess the state of the musculoskeletal system and the associated functions in order to recommend the type of prosthesis,
2. Create physiotherapy procedures in pre-prosthetic physiotherapy based on physiotherapy assessment, recent literature and evidence-based practice,
3. Plan the rehabilitation procedures of the upper and lower extremities after prosthetic fitting in order to restore the function of the hand or training gait,
4. Anticipate the most common complications after amputations and implement preventive procedures to prevent their development,
5. Valorize the effects of implemented rehabilitation procedures,
6. Educate the patient about procedures for maintaining the achieved functional status.

| **Course name** | **Abuse of Medication in Sports** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |
| **Course contents** | |
| 1. Introductory lecture: Basic groups of active substances used in sports and their modes of action<br>2. General pharmacology (introduction, classification of drugs, methods of application of drugs, nomenclature)<br>3. Pharmacokinetics<br>4. Pharmacodynamics<br>5. Pharmacogenomics<br>6. Use of hormones<br>7. Increase in oxygenation potential<br>8. Interactions, side effects and adverse effects of drugs in sports<br>9. Legal frameworks for taking drugs in sports<br>10. Methods of detecting illegal substances in sports<br>11. Basics of toxicological analysis<br>12. Gene doping | |
| **Learning outcomes of the course** | |
| After successfully completing the course, students will be able to:<br>1. Critically judge pharmacological terms,<br>2. To evaluate the pharmacokinetic, pharmacodynamic and pharmacogenomic properties of the main groups of drugs that are most often used in sports abuse,<br>3. To predict the expected effects of drugs that are most often used in sports abuse,<br>4. Predict the side effects and interactions of the effects of drugs that are most often used in sports abuse,<br>5. To present the methods of testing illegal substances in sports and the legislation on drugs in sports. | |

| **Course name** | **Preventive Programs in Physiotherapy** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. The role of physiotherapists in the prevention of diseases and pathological conditions
3. Physiotherapy procedures in the prevention of diseases of the circulatory system
4. Physiotherapy procedures in the prevention of rheumatic diseases
5. Physiotherapy procedures in the prevention of respiratory diseases
6. Physiotherapy procedures in the prevention of neurological diseases
7. Physiotherapy procedures in the prevention of osteoporosis
8. Physiotherapy procedures in the prevention of painful spine syndromes
9. Physiotherapy procedures in the prevention of injuries in athletes and recreationists
10. Possible ways of educating the patient for the purpose of prevention

**Learning outcomes of the course**

After taking the course, students will be able to:

1. Recommend preventive physiotherapy procedures for the prevention of diseases of the circulatory system,
2. Valorize the effect of preventive programs on the health status of an individual,
3. Create preventive programs for the purpose of preventing osteoporosis and painful spine syndromes,
4. To judge the effectiveness of physiotherapy procedures in the prevention of injuries of athletes and recreational players,
5. Valorize the importance of team cooperation when creating preventive programs.

| **Course name** | **Clinical Practice II** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. Acquisition of clinical skills in the field of applied physiotherapy - applied therapeutic intervention
3. Basics of physiotherapy exercises within the physiotherapy process
4. Physiotherapy process and physiotherapy as one of the main components of rehabilitation
5. The influence of external and internal factors on the speed of recovery after injury, damage, disorder or disease
6. Application of therapeutic exercises for the purpose of improving functional abilities
7. Application of activities to improve mobility and flexibility - active muscle inhibition
8. Application of mechanical aids and manipulative techniques for the purpose of improving mobility and flexibility
9. Application of biofeedback in therapeutic exercises
10. Activities to establish, maintain or improve the function of the proprioceptive system through therapeutic exercise
11. Application of physiotherapy methods in the acute, subacute and chronic phase

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Assess the functional capabilities of the injured athlete in the acute, subacute and chronic stages of the injury, and perform first aid on the field,
2. Anticipate possible complications in athletes after injury,
3. Choose and implement the most adequate physiotherapy intervention in certain phases of rehabilitation after an injury,
4. Compare the initial and final values in the functional status of athletes,
5. Assess the possibility of continuing sports activities after an injury,
6. Recommend physiotherapy exercises for the purpose of improving the functional abilities of athletes,
7. Argue the reason for the chosen physiotherapy intervention (physiotherapy process).

## *Fourth Semester*

| **Course name** | **Alternative Methods in Sports, Recreation and Wellness** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |
| **Course contents** | |
| 1. Alternative methods, integrative medicine and evidence-based practice<br>2. Representation of alternative methods in scientific and professional research and publications<br>3. Representation of the application of alternative methods as a complementary method of treatment in pain clinics<br>4. The role of alternative methods in relieving pain and increasing the quality of life<br>5. The role of alternative methods as additional, complementary methods of physiotherapy in prevention and rehabilitation within the framework of integrative medicine<br>6. Acupressure - basic principles of application<br>7. Acupuncture - basic principles of application<br>8. Kinesiotape - basic principles of application<br>9. Pilates - basic principles of application<br>10. Vibration training - basic principles of application<br>11. Myofascial massage in prevention and rehabilitation<br>12. Application of magnets in modern physiotherapy | |
| **Learning outcomes of the course** | |
| After successfully completing the course, students will be able to:<br>1. Assess the state of the musculoskeletal system as part of a physiotherapy assessment,<br>2. Choose complementary physiotherapy procedures in order to reduce pain and improve the functionality of the musculoskeletal system as monotherapy or as a complementary method within the integrative treatment of the patient,<br>3. Recommend the application of a particular complementary method in accordance with innovative practice, scientific knowledge and the individual needs of the patient or user,<br>4. Valorize the effects of the implemented procedures (through testing and measurements). | |

| **Course name** | **Legal Regulation in Sports and Healthcare** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. Organization of sports in the Republic of Croatia. Constitutional and political aspects of sport
3. Presentation and application of the Law on Sports, and other laws that apply to legal relations in sports regarding the application of postulates of sports civil law, sports criminal law, sports procedural law
4. A real person in sports
5. Sports commercial law
6. Sports labor law
7. Sports misdemeanor law
8. Colloquium
9. International sports law, insurance rights in sports and administration in sports
10. Organization of the health care system in the Republic of Croatia
11. Presentation and application of the Law on Health Insurance, the Law on the Protection of Patients' Rights, the Law on Medicines and Medical Products, the Law on Health Care, the Law on Physiotherapy
12. Act on Regulated Professions and Recognition of Foreign Professional Qualifications
13. How to search for legal regulations in the field of sports and health
14. Colloquium

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Analyze the system of sports organization in the Republic of Croatia,
2. Evaluate the organization of the healthcare system of the Republic of Croatia,
3. Review the legal position of physiotherapists in the healthcare system of the Republic of Croatia,
4. Independently search legal regulations in the field of sports and health.

| **Course name** | **Selected Topics from Sports Medicine and Physiotherapy** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Sadržaj i predmeta**

1. Introductory lecture: Critical thinking in the evaluation of the results of scientific works and new methods in the field of sports medicine and physiotherapy
2. Evidence-based practice in sports medicine and physiotherapy
3. Applied research in the field of sports medicine and physiotherapy
4. New diagnostic methods and digital technologies in sports medicine and physiotherapy
5. New physiotherapy methods of prevention and treatment of chronic non-communicable diseases
6. New physiotherapy methods of prevention and treatment of sports injuries and damage
7. Effects of the environment on the function and state of the organism and exercise in different environments
8. Adaptation of the human body to different environments and conditions and the role of the physiotherapist in this process
9. Methods of detection, prevention and treatment of overtraining, sports anemia, female sports triad and similar disorders in athletes
10. New methods of health risk screening and stratification of exercise participants and prevention of sudden cardiac death
11. Biomarkers in sports medicine and physiotherapy
12. Translational research in sports medicine and physiotherapy

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Evaluate newer methods in the field of sports medicine and physiotherapy,
2. Critically evaluate the results of recent research in sports medicine and physiotherapy,
3. Create physiotherapy and exercise programs for special populations and in special environments using new scientific knowledge and the integration of knowledge from the fields of sports medicine, physiotherapy and exercise physiology,
4. Valorize the methods of health risk screening and stratification of exercise participants and the prevention of unwanted events,
5. Anticipate the possible effects of the environment on the function and state of the organism during physical activity and implement the necessary modifications and preventive measures,
6. Assess the benefit-risk ratios associated with physical exercise and methods of detection, prevention and treatment of overtraining, female sports triad and similar disorders.

| **Course name** | **Clinical Practice III** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. Rehabilitation programs for heart diseases
3. Rehabilitation programs for lung diseases
4. Rehabilitation programs for diabetes
5. Rehabilitation programs for rheumatic diseases
6. Rehabilitation programs for neuromuscular diseases and spinal injuries
7. Rehabilitation programs for stroke
8. Rehabilitation programs for osteoporosis patients
9. Rehabilitation programs for patients with malignant diseases
10. Rehabilitation programs in the terminal stages of the disease

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Assess the functional status of an individual patient for the purpose of individualizing the rehabilitation program (heart diseases, lung diseases, diabetes, rheumatic diseases, neuromuscular diseases, spinal injuries, post-stroke conditions, osteoporosis, malignant diseases, terminal diseases...),
2. Recommend and implement the basic procedures of the rehabilitation protocol for certain diseases,
3. Adjust parts of the rehabilitation protocol according to the patient's individual needs,
4. Argument the selected physiotherapy process,
5. Determine the difference in the patient's functional status before and after a specific rehabilitation program,
6. Apply knowledge and skills from previous relevant subjects.

## Elective courses of the second year of study

| **Course name** | **Information Systems in Healthcare** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |
| **Course contents** | |
| 1. Information technology in healthcare. Definitions and content<br>2. System / collection and development of e-government<br>3. Digitization of the health system - potentials and challenges, assumptions and possibilities. Costs of information and communication technology<br>4. Computer networks and mobile devices. Remote connection of different business locations, network types and structures<br>5. Stages of building a healthcare business system<br>6. Computer system components and subsystems. Differences between hardware and software (operating systems, application, security and other solutions)<br>7. Teamwork, technology and people, organization and communication<br>8. Information systems. Data organization and management. Files. Database<br>9. Information and communication technology in the role of information mediator for all users of health system services<br>10. Network (web) solutions, pages and applications<br>11. Internet and types of electronic business<br>12. Security aspects of ICT use<br>13. Blockchain and application in the health system. Further development possibilities and world trends | |
| **Learning outcomes of the course** | |
| After successfully completing the course, students will be able to:<br>1. Analyze the currently available information and communication infrastructure in relation to the desired outcome of the service for users,<br>2. Valorize the current phase of the establishment of e-government, i.e. the application of ICT solutions in the public administration system,<br>3. Evaluate the web headquarters of electronic administration based on technical parameters,<br>4. Choose the possibilities of using cloud applications for the public administration environment,<br>5. Show responsibility during cooperation in team and individual work. | |

| **Course name** | **Physiotherapy in Professional Sports II** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. Analysis of the most common injuries in sports
3. Physiotherapy examination and intervention after ankle distortion
4. Physiotherapy examination and intervention after rupture of the meniscus in the knee
5. Physiotherapy examination and intervention after rupture of the anterior cruciate ligament of the knee
6. Physiotherapy examination and intervention for clicking hip syndrome
7. Physiotherapy examination and intervention after lumbar spine injury
8. Physiotherapy examination and intervention after thoracic spine injury
9. Physiotherapy examination and intervention after cervical spine injury
10. Physiotherapy examination and intervention after shoulder dislocation
11. Physiotherapy examination and intervention after calf muscle rupture
12. Physiotherapy examination and intervention after thigh muscle rupture
13. Physiotherapy examination and intervention after head injuries

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Create and develop complex rehabilitation programs for complex sports injuries,
2. Self-assess and determine the sports injury,
3. Classify the severity of a sports injury,
4. To conclude and make a decision on how to act in specific situations on the sports field,
5. Anticipate potential complications that may arise after a sports injury.

| **Course name** | **Sports Physiotherapy** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Introductory lecture
2. Sports physiotherapy for the most common injuries in handball
3. Sports physiotherapy for the most common injuries in football
4. Sports physiotherapy for the most common injuries in volleyball
5. Physiotherapy in the treatment of basketball injuries
6. Physiotherapy in the treatment of injuries of skaters and hockey players
7. Tests and measurements
8. Physiotherapy assessment of the injured athlete
9. Sports physiotherapy for the most common injuries in combat sports
10. Creation of an exercise program for the treatment of certain injuries
11. The importance of preventive programs for the prevention of injuries in sports

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Kritički prosuđivati o faktorima koji dovode do ozljeda u sportu,
2. Procijeniti preostale mogućnosti sportaša ili rekreativca,
3. Kritički prosuđivati o pravilnom odabiru vježbi,
4. Odabrati preventivne programe u svrhu prevencije ozljeda,
5. Interpretirati i primijeniti znanja sa svrhom izrade plana i programa terapije za sportaše.

| **Course name** | **Innovative Entrepreneurship** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |
| **Course contents** | |
| 1. Introductory lecture<br>2. Basic principles of entrepreneurship<br>3. Entrepreneurial way of thinking<br>4. Entrepreneurial and managerial functions<br>5. Entrepreneurship and innovation<br>6. Innovations and business process<br>7. The process of creating and developing a new venture<br>8. Innovative business model<br>9. Protection and management of intellectual property<br>10. Marketing plan<br>11. Organizational plan<br>12. Financial plan | |
| **Learning outcomes of the course** | |
| After successfully completing the course, students will be able to:<br>1. Critically judge entrepreneurship as a scientific and social phenomenon,<br>2. Assess entrepreneurial and managerial functions,<br>3. Critically judge the importance of an innovative, proactive and entrepreneurial way of thinking for personal development,<br>4. Choose innovative business models,<br>5. Interpret and apply knowledge with the purpose of creating an innovative project assignment. | |

| **Course name** | **Multidisciplinary Approach in Pain Rehabilitation** |
|---|---|
| **Prerequisites for enrolling in class** | **N/a** |

**Course contents**

1. Pain and theories about pain
2. Incidence and prevalence of pain in the musculoskeletal system and organ systems
3. Ways of assessing pain in physiotherapy - measuring instruments and scales
4. Topography and case history of the most common painful conditions of the musculoskeletal system
5. The role of physiotherapists in pain relief in other organ systems - cooperation in a multidisciplinary team
6. Modern physiotherapy approach to painful conditions of the spine
7. Modern physiotherapy approach to painful conditions of the upper extremities
8. Modern physiotherapy approach to painful conditions of the lower extremities
9. Physiotherapy based on evidence - methods and techniques in pain relief
10. Scientific knowledge and contextual factors of pain (placebo and nocebo)
11. Patient education about biopsychosocial factors that affect pain
12. Recommendation of methods and ways of maintaining the achieved functional status, methods of primary and secondary prevention and self-help for painful conditions

**Learning outcomes of the course**

After successfully completing the course, students will be able to:

1. Critically assess the framework of conceptual change about pain that will be provided to users during individual or group rehabilitation
2. To judge which techniques and in what way are related to the modern understanding of pain
3. Select therapeutic narratives about the pain analogy and present them clearly to the users
4. Recommend a therapy plan based on the latest knowledge of the neuroscience of pain
5. Critically judge which approach to education is the best for an individual user in order to make the therapy plan as effective as possible