# Master's Degree Program: KINESIOLOGY

Education-qualification degree: MASTER Proffessional qualification: Kinesiologist Duration: 1 year Mode of study: full-time

## Admission requirements and background:

Admission to the master's program of Kinesiology generally requires a Bachelor's degree with professional qualification kinesitheraptist (physiotherapist) or ergotherapist (Subject Field: Public Health; Code: 7.4.), Broad field of study: Health Services and Sport. This program is created for a students with a special preparation on various aspects of locomotion, movement, exercise, sports etc., and affinity to a multidisciplinary and interdisciplinary knowledge in this area and related scientific studies.

Teaching on this master's program develop the professional qualification and is a good background for a successful carrier, because improve the concurrence ability of the specialists in Bulgaria and abroad.

Master's programs related with scientific study of movement, known as Kinesiology or human kinetics are addressed for specialists with various professional qualification. World educational practice shows existence of a big amount of bachelor's and master's programs of Kinesiology differentiated according to different criteria. For example Science Kinesiology, Kinesiology in the area of Arts (Art Kinesiology), scientific investigations in the field of sport performance (Sport and Science) etc. Since, this is the first program on Kinesiology in Bulgaria till now, in this new master's program, accredited for a first time in Bulgaria in South-West University, an attempt is made to include the broad spectrum of scientific and applied aspects in this multidisciplinary area.

## Aims

(1) to enrich and internationalize the education of the specialists, graduated bachelor's programs related with exercise and movement, knowledge on locomotion of the healthy human beings by fundamental disciplines as: anatomy of movement and basis of kinesiology, neurophysiology of movement, bioenergetics of skeletal muscles;

(2) to go deep in the teaching on the functional research, related with contemporary methodology as: spiroergometry, kinesiological electromyography, isokinetic dynamometry, exercise biochemistry etc.;

(3) to ensure education on practical and applied disciplines, related with exercise and training, sedentary lifestyle effects, overtraining etc., which reveal the relation between physical activity and health;

(4) to enrich knowledge of these specialists on many activities related with motor control of skeletal muscles in various applied disciplines as: dance art, instrumental music, plastic art, vocal music etc.,

(5) to give the methodology and skills on the experimental approaches during kinesiological research at a different levels such as: a literature review preparation, selection of the experimental groups, nonparametric statistic analyses, experimental design and data interpretation etc.

### Knowledge

Students, educated on this master's program attain knowledge and proficiency on:

- (1) Subjects, ensuring education on basic disciplines as: applied physics (physics of rigid body and fluids, heat exchange, kinematics, dynamics, statics etc.), scientific research and statistics, non parametric statistical analyses of experimental data on physical work and physical effort, physical loading, motor skills and motor performance, sports, sport training, biophysics (introduction in physical and biological basis of the exciting structures) etc.;
- (2) Medico-biological disciplines, related with movement and training as: anatomy of the skeletalmuscular system and anatomy of movement, neuro-muscular basis of motor activity, functional research in sports and kinesitherapy (comprises spiroergometry for assessment of aerobic caoacity; evaluation of the anaerobic capacity, electroneuromyography, isokinetic dynamometry for assessemtn of force and power during eccentric, concentric and isometric contractions, bioenergetics of the motor activity and evaluation of the parameters for aerobic and anaerobic work; physiological basis of motor control, metabolism, bio-stimulation, supplementation and exercise performance;
- (3) Disciplines, related with motor activity and motor control of the skeletal muscles in the applied areas of vocal preparation for singing, dance art, instrumental art, and plastic arts, such as: classic exercise, folklore dances, typical dances, piano, accordion, graphics and drawing, painting, sculpture, applied arts, vocal singing.
- (4) Methodology of yoga practice and of basic sport disciplines as: field and track athletics, volleyball, handball, basketball, football, swimming, skis, tennis etc.

# Professional competencies and skills

The specialist with master's educational-qualification degree "kinesiologist" is preparing for realization in more complex sphere. This concerns not only the institutions and structures in which he could find professional realization, but the appointment held also.

The competencies of the specialists, based on their common and specialized preparation allow them to enlarge the areas of application and the subject of activity, which could be not only related with kinesitherapy, physiotherapy and rehabilitation. They could be engaged in scientific, investigatory, consulting, expert, organizational, health-educational, leading and management activities.

Kinesiologist has a competency to:

- realize manager, organizing, consulting, scientific and investigatory, expert, healthy-educational and leading activities in hospital, clinical and health institutions, institutes of scientific research, fitness centers, sport centers, schools and universities;
- to carry out curative, restorative and recreation activities, functional testing and rehabilitation in hospitals, polyclinics, clinical centers, sanatoriums, hotels, fitness centers, homes for old people and children with disabilities, home for disabled people, and other health and social institutions as well as;
- to inspire and habituate in patients, pupils, students, citizens, people with disabilities etc., needs and motivation for exercise, for natural and healthy way of life, moral virtues and good habits related with physical culture, good level of working capacity and motivating elders to initiate and maintain exercise and to overcome the sedentary lifestyle;
- to prepare and develop documentation related with scientific projects in areas related with kinesiology and physical therapy.

The students who obtain a Master's degree in Kinesiology are expected to:

- have obtained knowledge and skills meeting the requirements of the contemporary investigations and research in area of human movement and physical effort;

- have theoretical and practical knowledge in the disciplines included in the curriculum;
- have obtained skills to work with specialized facilities and terminology
- be able to apply multidisciplinary approaches to theoretical and practical issues
- to be able to work independently on experimental design of various research tasks;
- to be able to work on their future self-development

# Curriculum Specialty: Kinesiology PROFESSIONAL QUALIFICATION: Master Kinesiologist

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## COURSE DESCRIPTION COURSE DESCRIPTION

Course Title:Applied PhysicsApplied Type of presentation:Lectures / Practical classesHours per week / AS / SS:2 Lecture hours / 1 Practical hour / ASECTS credits:4

Lecturer: Assoc. Prof. Plamen Gramatikov, PhD, M. Eng. Assistant Prof. Dr. Anton Stoilov

Department: Physics Department; Phone: +359 882 818 557; E-mail: psgramat@yahoo.com

Course Status: Compulsory course in the Kinesiology M.Sc. Curriculum.

**Short Description**: Basic Concepts of Kinematics. Laws of Classical Dynamics. Forces. Inertial and Non-inertial Co-ordinate Systems. Conservation of Mechanical Energy. Mechanics of Absolutely Solid State. Moments of Inertia. Oscillations and Waves. Harmonic Oscillations. Free and Forced Oscillations. Pendulums. Fluid Dynamics. Bernoulli's Law. Basic Thermodynamic Principles. Ideal and Real Gases Theory. Maximum Entropy Principle. Intermolecular Forces. Basic Concepts of Molecular-Kinetics Theory. Electricity and Magnetism. Electric fields. Electromotive force. Electric potential. Magnetic forces and fields. Electromagnetic induction. Electrolysis Laws. Electrical discharges in gases.

**Course Aims**: Students acquire knowledge about objective fundamental natural laws, basic Physical methods of investigation and basic Physical concepts and relations. Material is selected depending of the specificity of the speciality. For that reason some specific topics are presented which are not included in the General Physics programme for other specialities. Parts of topics with practical importance are directed to the practical classes.

**Teaching Methods**: Lectures are visualised by demonstrations and laboratory tasks performance during the practical classes. From methods point of view teaching material is grouped in sections following logical consistency from Mechanics via Oscillations and Thermodynamics to Electromagnetism.

Requirements / Prerequisites: Basic knowledge in General Physics and Mathematics.

**Evaluation Method**: Defence of the Practical protocols (P); Written final exam upon the lecture course.

**Rating:** = 0,3.P + 0,7 (Exam)

Inscribing for tuition: Not necessary.

Inscribing for exam: Agreement with the lecturer and the Students Service Department

## **References**:

- 1. Gramatikov P. S. Physics I p., "N. Rilsky", SWU, Blagoevgrad, 2009 (in Bulgarian)
- 2. Toshev S., I. Baev, M. Marinov, L. Bonchev. *Physics*, Nauka I izkustvo, Sofia, 1987 (in Bulgarian)
- 3. Detlav A., B. Yavorskyi. Course on Physics, Higher school, Moscow, 1989 (in Russian)

# Abbreviation:

AS: Autumn Semester

SS: Spring Semester

## COURSE DESCRIPTION ANATOMY OF MOVEMENT WITH KINESIOLOGY – PART I

ECTS credits:	5		Classes p	oer week:	2L+0S +0E+1LE
Assessment:	written and oral	l exam	Course t	ype:	compulsory
Semester:	Ι				
Course coordinat	ing department:	Sports and Kine	sitherapy,	Faculty of I	Public Health and Sports
Lecturers (team	):		Depart	ment:	
Assoc. Prof. Maria Gikova, Ph D		National Sport Academy, Sofia			
Tel.: 0898 77 65	97		,		
E-mail: <u>mgikova</u>	<u>@abv.bg</u>				
Assist. Prof. Mar Tel.: 0896 73 34	,		Sports	and Kinesit	herapy

E-mail: mariakokova@yahoo.co.uk

## **Course outline:**

Students obtained knowledge on fundamental anatomical-functional disciplines. Motor system is the main object with a special attention on the so-called kinesiological characteristics. The material is in accordance with the requirements of the clinical and special disciplines. In the first part of the discipline, the students obtained knowledge on the functional anatomy and kinesiology in the context of the interactions between systems, proper terms, anatomical vocabulary and terminology, ideas for topographic anatomy etc. Knowledge on axes and planes is further included together with locomotor system, passive and active parts of this apparatus, types connections between bones and structural organization of the skeletal muscles.

## **Course topics:**

Osteology, bone tissue, types of bones in the skeletal system. Functions of the bones, kinematic links. Origin, genesis and development of the bones. Aging processes. Bones of the spinal column. Bones of the thoracic cage. Skull. Bones of upper and lower limb. Bones as leverage systems. Kinematic links of the locomotor system. Anatomical conditions for injuries and traumatism. Muscle apparatus, peculiarities of the muscle action - accompayning movements, active and passive muscle insufficiency, paradoxical action of the muscles. Muscle synergy: agonists, antagonists, fixators, inverse agonists or neutral antagonists. Muscles of head, neck, torso – insertions, functions and innervation. Anatomical and functional analysis of the spinal column movements.

## Teaching and assessment

The lecture course is presented by multimedia, anatomical models and posters. Practical exercises should be done with contemporary equipment in the laboratory on physiology and anatomy or in the University center for research in sport and kinesitherapy with isokinetic dynamometer, kinesiological EMG etc. The current intermediate assessment are accumulated basing on one or two tests and participation in the practical exercises.

## COURSE DESCRIPTION NEUROPHYSIOLOGY OF MOVEMENTS

ECTS credits:	3,5		Classes per week:	2L+0S +0E+1LE
Assessment:	written and	oral exam	Course type:	compulsory
Semester:	Ι			
Course coordinating d	lepartment:	Sports and Kines	sitherapy, Faculty of	Public Health and

Sports

#### Lecturers (team):

Prof. Nevena Stoyanova Pencheva, Ph D; **Department:** Sports and Kinesitherapy Tel.: 0899 147 701 ; E-mail: <u>nevena\_pencheva@yahoo.com</u>

Assist. Prof. Kristina Jivkova Grancharska; **Department:** Sports and Kinesitherapy Tel.: 0878 755 006 ; E-mail: krisy.grancharska@gmail.com

Assist. Prof. Maria Kokova, PhD; **Department:** Sports and Kinesitherapy Tel.: 0896 73 34 71; E-mail: <u>mariakokova@yahoo.co.uk</u>

## **Course outline:**

**Course outline:** The aim of the discipline is to expand theoretical and practical knowledge and skills of the students on these departments of physiology and physical labor movements that increase their competence and build knowledge on advanced concepts of posture, coordination, locomotion, motor control, motor behavior, motor learning, motor performance, and more., which are common themes of educational programs in kinesiology. It allows students to observe and carry out practical experiments and physiological tests and interpret the results obtained by electromyographic and polyphysiographic registrations, assessment of motor skills with the isokinetic tests, assessment of biomechanical parameters with modern methodological approaches and others. They assess further the basic biomotor abilities such as: strength, endurance, speed, flexibility and coordination etc.

## **Course content:**

MODULE A - Excitable structures, skeletal muscle receptors, muscle fiber types and motor units;

MODULE B – Spinal cord, excitation and inhibition in the spinal cord, mono- and polysynaptic reflexes, voluntary control of a single muscle, single-joint movements;

MODULE C - Brain, cerebral cortex and motor activity: motor functions of the brainstem, cerebellum, the basal ganglia and reticular formation, the motor cortex.;

MODULE D - Motor behavior and changes in motor behavior in fatigue and aging.

**Practical exercises** include: - excitability, structural organization of skeletal muscle and motor units - poly-physiographic registrations - EEG, ECG, EMG, elektrooculography, inklinometry etc. - EMG at rest and during static loading and telemetry, and - isometric protocols, eccentric and concentric isokinetic muscle contractions with dynamometers.

#### **Technology training and assessment:**

The lectures are taught media. Practical laboratory classes are held at the University center for functional studies in sport and kinesitherapy. At the end of the semester, students receive ongoing assessment, based on estimates from 2 or 3 test and assessment of the practical exercises, which appear at the examination (written and oral). Presentation of papers is also used as an additional form of continuous assessment.

## COURSE DESCRIPTION SPIROERGOMETRY, ISOKINETIC DYNAMOMETRY, KINESIOLOGICAL ELECTROMYOGRAPHY

ECTS credits: Assessment:	<b>5,0</b> written and oral exam	Classes per Course type		1L+0S +0E+4LE compulsory
Semester: Course coordinating of Sports	I department: Sports and Kin	nesitherapy, Fac	culty of Publi	c Health and
Lecturers (team):	Stoyanova Pencheva; Tel.: heva@yahoo.com	0899 147 701,	<b>Department:</b> Sports and k	Kinesitherapy
	Jivkova Grancharska; Tel.:	0878 755 006,	Sports and K	Kinesitherapy
Assist. Prof. Maria K E-mail: <u>mariakokova</u>	okova, PhD; Tel.: 0896 73 . @yahoo.co.uk	34 71,	Sports and K	Kinesitherapy

## **Summary:**

The objectives of the course aimed at acquiring theoretical and practical knowledge and skills of the students on functional studies of cardiorespiratory system and musculoskeletal system by assessing the biomechanical, physiological and electrophysiological parameters. The main forces which are conducted functional studies were healthy untrained individuals and athletes from different disciplines. The main modules of the course is reflected in the name of discipline. In his lectures is limited in favor of practical sessions to allow through the laboratory to obtain experimental data through the application of different methodologies that can be analyzed and discussed. Therefore, the purpose of training in various modules is achieved mainly through practical sessions.

## **Course content:**

Sprioergometric module covers: - functional changes in the respiratory and cardiovascular system during exercise; - methods for determining VO2max and their application; methodology of spiroergometric direct determination of VO2max and evaluation of parameters to be measured and calculated; - methods for indirect measures of VO2max, their limitations and advantages. Isokinetic dynamometer's Module include: - The role of skeletal muscle in human movement and generating different types of force in the context of subcellular structural organization of muscles and types of muscle contractions; - as dynamometers characterization methodology for measuring torque, force and the parameters associated with it - work, power, etc.; - isokinetic dynamometers methodology to evaluate the performances muscle and muscle function; - description and evaluation of the parameters to be measured and evaluated by isokinetic dynamometers; - research and applied aspects of isokinetic dynamometers in sport and kinesitherapy. Module kinesiological EMG include: -The role of EMG in studies of neuromuscular performances; - the relationship between physiological signal and EMG signal registered; - understanding the question whether the reliability of EMG signals can affect different factors: internal muscle and those controlled by the respondent; - a description of the characteristics of the recording equipment, the frequency and amplitude characteristics of the signal; - assessment of the importance of the applied limits of EMG to assess the neuromuscular control; - clarifying the factors that affect the validity and reliability of measurements obtained with EMG's technique; - registration and interpretation of miograms static, dynamic and isokinetic loading.

#### **Technology training and assessment:**

The lectures are taught media. Practical laboratory classes are held at the University center for functional studies in sport and kinesitherapy. At the end of the semester, students receive ongoing evaluation based on participation in workshops and assessments from the 1-2 tests, which appear at the examination (written and oral). Presentation of papers is also used as an additional form of continuous assessment. After passing exam (written and oral), the students receive final grade.

## COURSE DESCRIPTION SCIENTIFIC RESEARCH AND NONPARAMETRIC STATISTICS

ECTS: 5.00 Assessment: written and oral exam Classes per week: 2L+0су+0лу +2LE Course type: compulsory

Course coordinating department: Sports and Kinesitherapy, Faculty of Public Health and Sports

#### Lecturers:

Assoc. Prof. Elena Karashtranova, Ph D Department on Informatics, Faculty of mathematics and natural sciences e-mail: <u>helen@swu.bg;</u> Assist. Prof. Kristina Jivkova Grancharska; Tel.: 0878 755 006, E-mail<u>: krisy.grancharska@gmail.com</u>

Assist. Prof. Maria Kokova, PhD; Tel.: 0896 73 34 71, E-mail: <u>mariakokova@yahoo.co.uk</u>

#### Annotation:

This is a basic course on applied statistics in sport and exercise, including the specificity of the scientific investigations in the kinesiology. A special attention concerns the so-called nonparametric statistical methods and their application in the analises of experimental data derived from kinesiological research. The course includes the theoretical bases and the majority of applications of nonparametrical statistical tests and the possibilities of the informatics thechnologies as well.

The structure and the content of the course are relevant with the knowledge of the students on the informatics thechnologies generated in the respective bachelor courses. The topics concerns all disciplines using experimental data.

#### **Course topics:**

Methods of the scientific investigation: typical peculiarities of the contemporary science; experimental design; the speicificity of the experimental investigation in kinesiology; population and samples, sample distributions, numerical characteristics, nonparametric tests for investigation of the type of distribution, for comparison of ture means values of the samples, nonparametric methods for investigation of the type of scattering, fitting of curves, correlations etc.

#### **Teaching and assessment:**

During the course, the teachers, besides the theoretical bases on various topics, presents their application in scientific investigations, and their calculations in selected software medium for statistical analyses of experimental data.

During the practical exercises the students discuss topics under guidance of the teacher and applied the respective tests or procedure. The student suggest the experimental design, the data obtained and the relevant statistical tests. During the extracurricular jobs, students prepare the course project, use librarian facilities and sources and relevant software applications. During the semester the students

participate in the rationale or motivation of the procedures and tests studied, and solve problems independently. Exam consists on elaboration and defense of project and test.

## COURSE DESCRIPTION ANATOMY OF MOVEMENT WITH KINESIOLOGY – PART II

ECTS credits:	4		Classes <sub>J</sub>	per week:	2L+0S +0E+1LE
Assessment:	written and	oral exam	Course t	type:	compulsory
Semester:	Ι				
Course coordinating d	lepartment:	Sports and Kines	itherapy,	Faculty of Publ	ic Health and Sports
Lecturers (team):			Depart	tment:	
Assoc. Prof. Maria G	ikova, Ph D		Nation	al Sport Acaden	ny, Sofia
Tel.: 0898 77 65 97			,		
E-mail: mgikova@ab	<u>v.bg</u>				
Assist. Prof. Maria K Tel.: 0896 73 34 71,	okova, Ph D		Sports	and Kinesithera	ру

#### **Course outline:**

In the second part of the discipline, the students received knowledge on the muscles of upper limb and lower limb, kinesiological analyses of movement, cardiorespiratory system as a limited factor of exercise, adaptive morphological changes in physical activity and aspects of motor control as well.

#### **Content:**

Upper limb muscles – insertions, functions, innervation. Kinesiological analyses of movement in the joints of upper limb and shoulder. Muscles of lower limb – insertions, functions and innervation.

Мускули на горен крайник – залавни места, функции и инервация. Кинезиологични анализи на движенията в ставите на горен крайник и раменен апарат като цяло. Мускули на долен крайник – залавни места, функции и инервация. Arch. Kineziologichen analysis of movements in the joints and lower limbs, walking and squatting - standing.

Cardiorespiratory system as a factor limiting exercise. Adaptive morphological changes in physical activity. Anatomic and functional aspects of the management of movement. Movement as a process of managing, the nervous system as the governing body, the body as a manageable unit. Outer and inner circle of government, rights and feedback. Kineziological analysis of simple movements and complex motor actions - algorithm. Analysis of complex motor activities - walking, running, squatting, standing, lifting the arm to the vertical position - anteflexion and abduction. Modern methods for analysis and modeling of the musculoskeletal system. Internal and external force field.

#### **Teaching and assessment:**

The course is conducted using multimedia molazhi anatomical and poster boards. The workshops are held at the Center for Functional studies in sport and kinesitherapy with isokinetic dynamometers, kineziologichna EMG etc. Current estimates are calculated based on one or two tests and participation in practical exercises ...

## **COURSE DESCRIPTION**

## **BIOENERGETICS OF EXERCISE**

ECTS credits: Assessment:	3 written exam	Classes per week: Course type:	2L+0S +0E+1LE compulsory
Semester: Course coordinating d	I lepartment: Sports and Kir	esitherapy, Faculty of Pu	blic Health and Sports
Lecturer: Assist. Prof. Maria K Tel.: 0896 73 34 71,	okova, Ph D	<b>Department:</b> Sports and Kinesithe	rapy

## **Outline:**

Bioenergetics is the study of energy transposition under various metabolic conditions. Metabolic conditions which will be studied in the proposed program include rest and differing intensities and types of exercise and work.

The aim of the proposed program is to provide basic knowledge on the energy-supply systems of the organism at rest and during exercise. The basic terms of bioenergetics with an emphasis on the main catabolic energy-supply pathways will be addressed. Cellular structures related to energy transposition will be studied in detail – mitochondria, membranes, myocite, etc. Special attention will be paid to proteins, protein structure, metabolism and nutritional need. Some of the main topics will include the lipid and carbohydrate metabolism during exercise. Finally, the role of minerals and vitamins as metabolic regulators will be discussed.

#### **Contents:**

Lecture:

**Basic energetic** 

Cellular structures and energetic, membrane structures

Metabolism – catabolic and anabolic pathways

Energy suppy of skeletal muscles; red and white muscle fibers.

Energy need at rest and during exercise. Need of proteins, lipids and carbohydrates.

Antioxidants and vitamins

Practice:

Determination of energy consumption and respiratory quotient via spiroergometry during exercise; variation and meaning of R during aerobic and anaerobic mode of exercise Determination of glucose and lactate concentration, treatment of blood samples Metabolic calculations – various methods

## **Organization and assessment:**

Lectures will be held using multimedia. The practical laboratory exercises will be carried out in the University Center for Research in Sports and Kinesitherapy. All graduates from the program will be given the opportunity to participate in actual experimental work.

Current semester grade will be formed by the average grades of two tests. To take the final exam graduates will need to have current grade at least 3.0.

## COURSE DESCRIPTION PHYSICAL ACTIVITY, HEALTH, MORBIDITY AND OCCUPATIONAL THERAPY

ECTS credits:	2		Classes per w	veek:	1L+1S +0E+0LE
Assessment:	written exa	am	Course type:		compulsory
Semester:	Ι				
Course coordinating of	lepartment:	Sports and Kine	sitherapy, Faci	ulty of Public	Health and Sports
Lecturer:				Departme	
Prof. Ivan Topuzov				Sports and	l Kinesitherapy
Tel.: 0899 147 701,					
E-mail: ivan_topouzov	@swu.bg				
Lav exercises:					

Assist. Prof. Kristina Jivkova Grancharska; Tel.: 0878 755 006, E-mail: krisy.grancharska@gmail.com

## Annotation.

Course "Physical Activity Health, Morbidity and ERGOTHERAPY" introduces students to the wording and meaning of health systems to assess their health and grades of health. Boundary conditions are considered in health. Special attention is paid to the influence of different types of physical activity on health and the risk of occurrence of diseases inconsistent with individual abilities loads, including stress, surge micro- and makrotraumatisam. Sport for health is seen as a means to strengthen the body and prevent stress and disease. Students learn the role and tasks of occupational therapy in the rehabilitation of injuries and illnesses, including. resulting from physical activity and sport.

## **Course content:**

Health and Diseases - Definitions, specifications. Concept of healthcare. Structure and trends in incidence in Bulgaria, Europe and the world. Physical activity and its relationship to health and disease. Oxidative stress and sports. Diseases of sports Surge micro-and macro-trauma. Natural resources and the sport as a means to strengthen the body and prevent stress and disease. Their impact on immunity and patenting. Role and tasks of occupational therapy in the rehabilitation of injuries and illnesses, including. resulting from physical activity and sport. Lodi-model – application in the kinesiological practice. Adapted physical activity and sport in the rehabilitation of people with chronic diseases and disabilities. Role of Art (art-therapy) in the rehabilitation of children and adults. Importance of animation and supervision of kinesiology, kinesitherapy and rehabilitation.

## Teaching and assessment:

The course is conducted using poster boards and seminars. Current estimates are calculated based on one test and participate in seminars.

# COURSE DESCRIPTION CLASSICAL EXERCISE

ECTS credits: Assessment:	2 exam	Classes per week Course type:	: 1L+0S +1E+0LE elective
Semester: Course coordinat	I / II ing department:	Sports and Kinesitherapy,	Faculty of Public Health and Sports
Lecturer:		Department:	
Prof. Anelia Yaneva, Ph D		Choreography	
Tel.:		Facult	y of arts
E-mail:			

## **Summary:**

Students learn and acquire the basic movements in the field of classical dance. In the course students record and analyze the basic requirements in the performance of the studied movements - any errors and prerequisites for the proper absorption of movement. The students learn the basic elements of classical dance in three groups – rail's movements, movements of the environment; - jumps.

## **Course content:**

Analysis and ways of learning moves and jumps preparing learning elements of classical dance. Analysis and methods of use of rhythmic movements. Analysis and ways of utilization of movements partnership. Analysis and ways of utilization of movements for stage design. Analysis and ways of learning basic movements of classical dance. Moves and jumps preparing learning elements of classical dance - Temps leve saute; Changement de pied; Pas echappe; rhythmic movements - clapping in different stroke sizes, focusing on different time bars, different combinations of clapping with certain moves. Moves Partnership - Pas chasse, pas ebmoite, studying regiment waltz. Stage movements patterns - combinations developed diagonally circle in two rows. Simple movements of classical dance.

## Teaching and assessment:

From a methodological point of view, the material is divided into sections. The course aims to familiarize students with the knowledge of the movements in the field of classical dance, the principles and characteristics of the performance of movements from the field of classical dance, to know the requirements for the development of movements in the field of classical dance, to master and be able independently apply combinations of movements developed in the field of classical dance.

The course ends with an exam at the end of the semester, while forming the final assessment scores are reported on both tests, and the individual work of students.

# COURSE DESCRIPTION FOLK DANCES

ECTS credits:	2		<b>Classes</b>	per week:	1L+0S +1E+0LE
Assessment:	exam - wri	tten and	Course t	type:	elective
	practical				
Semester:	I / II				
Course coordinating of	department:	Sports and Kines	sitherapy,	Faculty of Publi	c Health and Sports
Lecturer:			Depart	tment:	
Prof. Nikolai Cvetko	v, Ph D		Chore	ography	
Tel.: 0899 14 77 01			Facult	y of arts	
E-mail: tsvetkov_n@s	swu.bg				

## **Summary:**

Course "Bulgarian Folk Dances" contains Draft general overview of Bulgarian folk dances. Course provide historical data for Bulgarian folk dances. Students learn folk dance ethnographic specimens from all areas to get acquainted with the style and character of the performance. The course includes topics of Bulgarian ethnochoreology. The students master the different samples of Bulgarian folklore dance.

## **Course content:**

Overview of Bulgarian folklore dance. Ihistorucal information about Bulgarian folk dances. Dance as public entertainment. Ritual dance culture. Ritual dances of the calendar cycle. Ritual dances of the family cycle. Female ritual dances. Girlish and feminine ritual dances. Male ritual dances. Mastering the dance patterns from Northern folklore region. Mastering the Dance Shoppe samples of folklore region. Mastering the dance patterns of the Thracian folklore region. Mastering the dance patterns from Pirin Folk field. Mastering the dance patterns folklore from Dobrudja area.

## Teaching and assessment:

The course consists of lectures, exercises and individual work of students. The course takes place in the traditional manner, supported by examples choreography. Place tasks for independent work and teamwork of-class work. Practice preset issues complementary lectures. Held in the dance hall with an accompanist. By following technology development demonstration of lectures exercises prepare and and to for self-test. The course ends with an exam - written and practical at the end of the semester. The final evaluation report the results of the tests and exams (written and practical) in the ratio 6:4.

# COURSE DESCRIPTION DISTINCTIVE DANCES

ECTS credits: Assessment:	2 exam - written	Classes per week: Course type:	1L+0S +1E+0LE elective
Semester:	I/II		
<b>Course coordinating department:</b>		Sports and Kinesitherapy, Faculty of	Public Health and Sports
Lecturer:		Department:	
Assoc. Prof. Petar Petrov, Ph D		Choreography	
Tel.: 0899 14 77 01		Faculty of arts	
E-mail: poterov	aswu.bg		

#### **Summary:**

The course of dances is aimed at enriching the knowledge and broadening the choreography of future specialists and familiarization with the style and character of the dances of various nations. During the course students develop their abilities improvises by creating variations and new developments on various dance themes. The fundamental nature of the subject determines the purpose of the proposed curriculum to provide basic knowledge to students in the function of all physiological systems in the human living organism as at rest and during exercise. The study of typical dances are preconditions for the physiological bases for the construction of motor habit and skill.

#### **Course content:**

Emergence of typical dances and typical term nature of dance. Basic requirements for building a typical Exercise. Basic requirements for the building of the dance scene. Didactic principles of methodical distribution of the material. Similarities and differences in dance movements and costumes pattern of different dances. Stanislavsky to posture, gesture and facial expression. Training Methods. Methods of the acquired material. Learning the basic moves of various national dances. Learning from the typical exercise Exercise. Learning the exercises Stanislavski system to control the motor control of movement, posture, gestures and breathing. Learning the model dance studies in the nature of three nationalities consistent with the current capabilities of students.

#### **Teaching and assessment:**

The course is delivered in the approved manner. There is a ready multimedia presentation of course materials and video, if we are given such a technique. The workshops are held in appropriate facilities equipped with rails and mirrors. Classes are accompanied by an accompanist or audio equipment. The course ends with an exam - written. It covers two theoretical questions from the syllabus.

# COURSE DESCRIPTION PIANO

ECTS credits:	2	Classes per week:	1L+0S +1E+0LE
Assessment:	exam - written	Course type:	elective
Semester:	I / II		
Course coordinating of	lepartment: Sports and Kine	sitherapy, Faculty of Public	e Health and Sports
Lecturer:		Department:	
Assoc. Prof. Maria C	Goranova, Ph D	Music	
Tel.: 0899 14 77 01		Faculty of arts	
E-mail: E-mail: maria	_g @swu.bg		

## **Summary:**

Course "Piano" is optional and purpose of the proposed curriculum is to give students basic knowledge regarding relationships, hearing music - Fingertip-motor skills and habits. The short course addressing the issue of musical hearing and its active manifestation in the process of playing piano. The aim is to focus attention on building basic Fingertip-driven and manual piano skills, using different rhythmic and song samples. Provides an opportunity for students to improvise individually and in pairs and different rhythmic sound design as an expression of polar and close emotional states.

Training is necessary for students to have a simple ear for music.

#### **Course content:**

Music as an art form. Elements of musical expression. Not acquainted with the note writing. Introduction to the piano keyboard. Children's song - an expression of attitudes and emotions. Basic and derived levels of sound lines. Signs of alteration. Problems arise when playing by ear and playing notes. Ensemble playing. Types and skills required. Run by ear and imitations of different rhythmic and melodic consequences. Gaining skills assessment alien and their exact implementation. Perform various rhythmic phrases a musical score recording. Introduction to the piano keyboard and some basic elements of set-play. Playing by ear a familiar melodic succession and simple children's songs. Reading and playing musical score. Ensemble playing and improvisation

## Teaching and assessment:

The course is delivered in a manner approved by using multiple tables and diagrams illustrating the music "live". The workshops are held in room with two pianos. At the end of the semester, students receive ongoing assessment, based on estimates one test and evaluation of thematic development / paper.

## **COURSE DESCRIPTION**

## Course Title:

## DRAWING AND GRAPHIC

Semester:	1/2
Type of presentation:	Lectures and Practical Exercise
Hours per week AS / SS:	1 Lecture hours + 1 Practical Exercise
ECTS Credits:	2.0
Lecturer:	prof. Georgi Drachev

## Department: Fine arts, E-mail: georgi \_drachev@swu.bg

## Course Status: Elective course in the Kinesiology / Sports kinesiology

#### Annotation

The painting and Graphic course provides complex knowledge –predominantly practical from the field of painting and graphic. This study discipline is basic in teaching students dealing with fine arts. Thus students obtain technical skills connected to different types of paintings and graphical techniques.

The lectures course is connected to basic problems, expressive means and concepts from the field of painting and graphic both in historical and contemporary aspects. Basic theoretical knowledge is taken into consideration which is used in practical activities.

The practical course of painting is connected to the following study disciplines: Painting, Plastic Anatomy, Modelling, History of Fine Arts etc. Painting and Graphic are defined as additional study disciplines for the study process of the Kinesiology subject.

## Content of the study program

Targets of the subjects Students t obtain complex preparation in the field of painting and graphic. This target is connected to basic concepts and problems from practice and theory. It is performed via coordination between lectures and practical exercise defined in the program.

This is made possible via the following tasks implemented in the Painting and Graphic study:

• Students to get familiar with characteristics of graphic painting in theory and practice. Everything which is necessary for theoretical and practical preparation of a student following this study discipline;

• To obtain basic theoretical knowledge connected to graphic painting oh nature mort, landscape and human figure. Mastering of techniques in graphic painting and expressive capacity of basic materials.

## **Organization of assessment**

During practical exercise acquired skills are being checked connected to lecture course tasks and mostly to practical exercise tasks which are dominating, connected to auditorium and outside activities. Final goal is professional assimilation of painting skills in accordance with their future occupation.

The total credit of the study discipline is 2 which are provided for one semester. The total credit is sum of the credits for auditorium activity and the credits for outdoor activity. The total grade is a result of the current control and the exam grade.

#### COURSE DESCRIPTION PAINTING

ECTS credits:2Classes per week:1L+0S +1E+0LEAssessment:examCourse type:electiveSemester:I / IICourse coordinating department:Sports and Kinesitherapy, Faculty of Public Health and SportsLecturer:Department:Prof. Emil Kukov, Ph DArtsE-mail:Faculty of arts						
Semester:       I / II         Course coordinating department:       Sports and Kinesitherapy, Faculty of Public Health and Sports         Lecturer:       Department:         Prof. Emil Kukov, Ph D       Arts	ECTS credits:	2	Classes per week:	1L+0S +1E+0LE		
Course coordinating department:Sports and Kinesitherapy, Faculty of Public Health and SportsLecturer:Department:Prof. Emil Kukov, Ph DArts	Assessment:	exam	Course type:	elective		
Lecturer:Department:Prof. Emil Kukov, Ph DArts	Semester:	I / II				
Prof. Emil Kukov, Ph D Arts	<b>Course coordinating department:</b>		Sports and Kinesitherapy, Faculty of Public Health and Sports			
	Lecturer: Department:					
E-mail: emil kukov@swu.bg Faculty of arts	Prof. Emil Kukov, Ph D		Arts			
	E-mail: emil_kukov	v @swu.bg	Faculty of arts			

## **Summary**

The course objective "painting" is to provide a system of knowledge on the theory of painting and pictorial skills necessary for successful development of paintings, develop visual-motor coordination in working with materials and techniques. In this course gives knowledge about the technology of painting, composing knowledge, of drawing, lighting and shading, and color volume and spatial development of the specific nature of painting expression, knowledge of proportions and plasticity of the human body, knowledge of building space by laws linear and aerial perspective.

## **Course content**

Color harmonies and interplay of colors / induction /. Contrast. Manipulative actions scenic materials. Building a custom engine for compositional construction of still life. Technological features of watercolor technique (wet dry). Color mixing. Volume of drawing and building lighting and shading still life. Spatial organization. Technological features of watercolor technique (wet on wet). Proportions and construction of plastic head with artistic means. Technological features of the tempera technique. Local values and materiality in painting the human figure from life. Technological characteristics of the oil technique. Still life of everyday objects and flowers with colorful drapery in contrast range. Paper, watercolor and more. painting materials (pastel - dry, oily). Still Life by sharp-edged objects, plaster ornaments and draping in monochrome range. Paper, Watercolor (wet dry). Still Life with household items and gypsum head draped in warm range. Paper, water color (wet-on-wet). Schematic sketch of a human head (background color draping). Schematic sketch of a female figure wearing (sitting) on a colored background.

## **Teaching and assessment**

Methods of presenting lectures are lecture, discussion, talk, visualization (reproductions of artwork, sketches of student funds etc.)., Interpretation, evaluation and monitoring, and demonstrations and corrections (with practical exercises). The technique used is capable of displaying video (over 200 video art), DVD, multimedia (multimedia laptop with a video projector) aspektomat (with 4,000 art slides).

The final score is a function of the arithmetic mean score of current control derived from semester written examination. It reports the results of monitoring and evaluation of the test in the ratio 4:6 contingent parts.

## COURSE DESCRIPTION SCULPTURE

ECTS credits: 2 Assessment: exam Classes no

Classes per week: 1L+0S +1E+0LE Course type: elective

Semester: I / II

 Course coordinating department:
 Sports and Kinesitherapy, Faculty of Public Health and Sports

 Lecturer:
 Department:

 Prof. Dimitar Sotirov, Ph D
 Arts

 Faculty of arts

## Summary

The course on "Sculpture" is aimed at detecting the spatial problems of plastic language arts. The course aims at "Sculpture" is to give as soon as richly culture. Training is done in two ways: plastic relief and management of the human body. The students master the plastic construction of human body composition development in sculpture, familiarization with the positioning of the sculpture in space, getting a good plastic culture.

#### **Course content**

What is modeling? Supplies, tools and materials. Modeling per kind. Embossed building composition. Composition - types of relief. Genres in sculpture. Materials. Nude - kind and study. What is sculpture? Historical development. Modeling a classic relief plaster cast. Modeling of human head from a plaster cast. Modeling the figure.

## **Teaching and assessment**

Sculpture Training includes lectures and practical exercises. The basic form is "a kind sculpture" and free reproduction of nature into sculptural forms. We use a large number of reproductions of artworks to illustrate the learning process. The final score is the result of the monitoring and evaluation of the examination. The practical orientation of the course determined to adopt a 4:6 relation between the proportion of exam assessment and monitoring.

#### COURSE DESCRIPTION APPLIED ARTS

ECTS credits:	2	Classes ]	per week:	1L+0S +1E+0LE
Assessment:	exam	Course t	уре:	elective
Semester:	I / II			
<b>Course coordinating department:</b>		Sports and Kinesitherapy, Faculty of Public Health and Sports		
Lecturer:		Depart	tment:	
Assoc. Prof. Zdrav	ka Lisiiska, Ph	D Arts		
		Facult	y of arts	

## **Summary**

The course aims to give a basic knowledge of applied arts and to make students certain artistic skills at a basic level to ensure practical implementation of artistic and aesthetic problems.

#### **Course content:**

Definition and nature of applied art. Typology. Motor control of fine movements and specific features of Visual activity in the arts. Materials and design techniques. Decorative techniques for processing of textile materials as factors for motorics hands. Decorative techniques when working with paper skin and veneers, decorative techniques such as occupational therapy when working with plastic materials. Motor skills in designing decorative designs using monotype. Motor skills in making decorative composition with vortex surfaces. Development of a utilitarian object with patchwork, appliqué and collage - elements of training for precision and accuracy. Making a decorative object using macro technique. Developing decorative designs with flat and textured application. Motor activity of the fingers and wrist for making art and utilitarian object using papier mache technique. Specificity of motor activity in the preparation of souvenir or addition to clothing using plastic materials.

## **Teaching and assessment:**

The course is conducted in a traditional manner with the approved use of multiple graphs, drawings and sketches to illustrate. In teaching using examples of long experimental research holder discipline. The workshops are held in room design with secured workstations for students and opportunities for using audio-visual aids. At the end of the semester students graduate with an exam score. It is done by assessing the practical and theoretical assessment tasks - writing a synopsis off the question.

# COURSE DESCRIPTION INTRODUCTION TO VOCAL TRAINING

ECTS credits: 2.0 Type of evaluation: Exam Semester: I/II Weekly hours: 1π+0c+1y+0πy Status of the course: elective

Leading demaprtment: Drama Department School of Arts

#### Lecturer:

Associate professor Galina Popova E-mail: galateya@swu.bg

#### Annotation:

The purpose of the vocal training is the development of vocal technique (a combination of specific habits and skills) of future performers – singers. The development of vocal technique is a process of targeted willful mastering, control, and automation of specific motion of the singing. The syllabus is designed to offer a wider view of the kinesiology and to provide understanding about a professional performing art whose specific movement side is subject to study by the Kinesiology of Art, not taught in Bulgaria, as well as a practical mastering of the vocal technique.

#### **Content of the syllabus**

Sound – tone and noise – physical characteristics. Structure and physiology of the vocal apparatus. The function of the larynx in the production of voice. The role of the nervous system in the production of voice. Phonotoric reflex arc. Vocal body scheme. Breathing as an engine of voice. Specifics of breathing for singing. Practical exercises for mastering

breathing. Resonance system of human voice. The role the glottis. Qualities of the voice – necessity for vocal technique. Accuracy of pitch. Mastering vocal technique. Coordination between the senses of the muscles and the hearing. Placement and support. Specifics of the activation of the torso muscles, lower limps and the facial muscles in mastering vocal techniques. The placement of the larynx in singing. Classification of singing voices – indicators. Ranges, registers and transition of female and male voices. Mastering vocal transition points. The role of closing. Work with sound in different types of voices, shaping tones in different ranges. "Attach" of the tone. Types of weaknesses in singing and speaking and ways to overcome. High position of sound. Diction and articulation in singing – specifics. Vowels and consonants in the language and their role in singing. Some healing aspects of sound and singing. Historical overview of the development of the artistic singing and vocal technique. Variety of vocal terms.

#### Teaching methodology and evaluation:

The course is led on the base the traditional methods, using a lot of drawings, schemes, and diagrams on a projector or handouts to the students, Practical exercises are held in a hall with piano and a big mirror. Ongoing supervision is realized via written assignments and on the base of the practical work. The final grade shows the results from the supervision and the grade from the exam in 4:6 ratio.

# COURSE DESCRIPTION METHODS OF TEACHING IN ATHLETICS

ECTS credits:	2,	Classes per week:	1L+0S +0E+1LE		
Assessment:	written and oral exar	n <b>Course type:</b>	elective		
Semester:	I / II				
Course coordinating d	lepartment: Sports and	nd Kinesitherapy, Faculty of	Public Health and		
Sports					
Lecturer:					
Assoc. Prof. Chavdar	Kotzev				
Department: Sports and Kinesitherapy					
Tel.: 0896 96 25 45	E-mail: <u>chavdar@a</u>	<u>bv.bg</u>			

#### **Summary:**

Course "Athletics" form and provides knowledge and practical skills on technology at the most affordable and most widely used recreational athletics exercises and mass-rehabilitation activities; athletics mastering specific tools and methods for developing physical skills, the use of appropriate athletic exercises for rehabilitation procedures, load control in the application of athletic exercises.

Discipline allows: to increase the level of training and conditioning, engine functionality to students and to enrich the arsenal of motor vehicles and methods of future occupational therapists.

#### **Course content**

Athletics in the historical aspect in modern times. Classification of athletics disciplines. Heating in athletics. Races in athletics. Jumps in athletics. Throwing in athletics. Physical qualities in athletics. Exercise in athletics.

#### **Teaching and assessment:**

The course ends with practical exam through which assess the level of overall physical fitness as a necessary minimum motor capacity. Requirements:

• Covering the following physical fitness tests: - jump seat with both feet; - shot-put 4 kg bottom – forward; - 800 m running smoothly

- Assess each test separately 6-level score on a special table
- Calculate the average score of all tests
- Be sure to cover all tests
- Each test must be at least 3 Average score

Final assessment and planned for this course 2 credits are obtained by meeting the requirements for the practical test and attendance requirements and activity sessions.

## COURSE DESCRIPTION METHODS OF TEACHING BASKETBALL

ECTS credits: 1L+0S +0E+1LE 2 Classes per week: Assessment: written exam **Course type:** elective I/IISemester: Course coordinating department: Sports and Kinesitherapy, Faculty of Public Health and Sports Lecturer: Prof. Kiril Kostov, Ph D **Department:** Theory and methodology of Physical education Assistant: Nikolai Hadjiev E-mail: nimago@swu.bg

#### **Summary**

The proposed curriculum guidelines shall be considered in the methodology of teaching basketball. Teaching is the most difficult and complex part of learning basketball. It can only be made when the right knowledge and applied methodology.

The basic concepts and classification of the techniques and tactics of basketball, including proper mastery of the art of the player without the ball (basketball standing, walking, running, stopping, turning, pivotirane, jumping, false movements), the technique of the player with the ball (holding , hunting, feeding, keeping, shooting baskets, false movements paced basketball) and individual, group and team tactical in attack and defense.

## **Course content**

Technique of the game with and without the ball, methodology training technique of movement.

Methods of training in tactics of the game on offense, methods of training in tactics game protection rules organized.

## **Teaching and assessment:**

Workshops and training includes practical exercises. The final grade is based on practical and written exam.

# **COURSE DESCRIPTION Methodology of Handball Education**

ECTS credits: 2.0 Assessment form: Examination Term: I/II Methodical Department Department of "Sports and Kinesitherapy" Faculty: Public Health and Sports Lecturer: Associated Professor Stoyan Ivanov E-mail: <u>dekan.st.ivanov@swu.bg</u> Per Week 11+0se+0le+1pe Status: Optional

Assistant: Novko Popov

## Annotation

The implemented in the course study material provides the necessary knowledge and creates conditions for the utilization of sports and technical and sports and tactical skills in handball. The basic methodological issues of education and training are observed. Scientifically based methods and programs for the organization of training and diagnostic performance are presented. Education is of methodical and practical character and is directly related to the preparation of master in Kinesitherapy.

## Content

Origin and development of handball as a sport game. Basic defense and offence tactics. Diagnosis of achievements of those involved in handball. Kinesitherapy and sports - motor activity in handball. Rules of the sport games and handball in school.

#### Technology of education and assessment

Training is conducted in a traditional manner with the approved use of multiple graphs, drawings and sketches to illustrate through overhead projector and multimedia presentation. Examples of longstanding scientific - methodical, and practical activities are used in teaching provided by the tutor. It covers two theoretical questions from the syllabus, which is available to students at the beginning of the semester.

# COURSE DESCRIPTION METHODS OF TEACHING IN FOOTBALL

ECTS credits: 1L+0S+0E+1LE 2 **Classes per week:** written exam elective Assessment: **Course type:** I/IISemester: Course coordinating department: Sports and Kinesitherapy, Faculty of Public Health and Sports Lecturer: Prof. Vasil Jechev. Ph D **Department: Sport and Kinesitherapy** Assist. Prof. Valeri Cvetkov

## Summary

Curriculum reveals the essential moments of the problems, according to recent advances in scientific and technical and practical aspects of the fields of football. Lectures Football affected most important contemporary theoretical formulations of the essence, the process of training techniques and tactics of football. Particular attention is paid to the process of football practice. The proposed curriculum methodical and practical classes the teaching methodology football.

## **Course content**

Nature and characteristics of football. Origin and development of football. Football game like activity. Training process - nature and characteristics. Basic racing rules. The process of training in football. Principles and methods of training. Formation of motor skills and habits Education and training of technical skills of the game of football. Technique of ball movement. Techniques and ball training workout tactical and motor action soccer game. Tactics of protection. Tactics of attack. Adaptive tactics. Tactical systems. The process of football practice. Principles and methods of training. Theoretical, physical, technical, tactical and psychological preparation. Medico-pedagogical control of sports training

## Teaching and assessment

The evaluation of the results achieved during the course Football is consistent with Ordinance  $N_{2}$  21 of the Ministry of the September 30, 2004 to implement the system of accumulation and transfer of credits.

The total credit course is 2 credits. Audience employment receive 1 credit, and from extracurricular - 1 credit. The first semester (PA) graduate students with continuous assessment, which is based on the active participation in the exercises, evaluation of current control (preparation of plan syllabus) and practical test involving studied during the semester elements of football.

The final grade is a summary of the ongoing evaluation of the first semester (PA), the results of the tests and the results of practice. It is written. It covers two theoretical questions of pre syllabus distributed to students

# **COURSE DESCRIPTION Methods of Swimming Education**

ECTS credits: 2.0Per Week 1l+0se+0le+1peAssessment form: ExaminationStatus: OptionalTerm: I/IIMethodical Department: Department of "Sports and Kinesitherapy"Faculty: Public Health and Sports

Assistant: Daniela Lekina

Lecturer: Professor Stoyan Ivanov E-mail: <u>dekan.st.ivanov@swu.bg</u>

#### Annotation

The course "Swimming" introduces master students with the basic theoretical principles on which the modern methods and practice of swimming are constructed. Emphasis is set on the laws of hydrodynamics underpinning on the rational techniques of swimming.

The specificities of the different swimming techniques styles are addressed in detail. The second issue considered is the teaching methodology of swimming, suitable for children and young people, and adults. The program includes specific exercises and methods for practical mastering of the swimming technique by students.

## Content

The Educational content is structured in two modules of 15 hours of lectures and practical exercises. Module One - Theory of swimming. Historical data of swimming. Significance of swimming for the physical development of the person. Hydrodynamic laws of swimming. Methods of swimming education. Biomechanical characteristics of the technique of "crawl" style. Biomechanical characteristics of the technique of "breaststroke style. Biomechanical characteristics of the technique of Dolphin" style. Second module – methods of swimming education. Exercises for getting used to water environment. Game exercises for immersion and moving in water. Methods of studying the technique of "crawl" style. Methods of training in the technique of "back crawl". Starting techniques and breaststroke techniques.

# Educational technology and assessment

Training is conducted in a traditional manner with the approved use of multiple graphs, drawings and sketches. Audio-visual technical tools are used. The workshops are held in an indoor swimming pool using a swimming float or inflatable cushions. Students who have difficulties in acquiring swimming techniques exercise primarily in a shallow pool. Practical Exam: 50 meters crawl, back crawl and breaststroke. The theoretical exam is in written form. It covers two theoretical questions which are provided to the students at the beginning of the term. The final grade is based on the average of the practical exam and the theoretical one.

# **COURSE DESCRIPTION METHODS OF TEACHING GYMNASTICS**

ECTS credits:	2	Classes per	r week:	1L+0S +0E+1LE	
Assessment:	written exam	Course typ	e:	elective	
Semester:	I / II				
Course coordinati	ing department:	Sports and Kinesitherapy, Fa	aculty of	Public Health and	
Sports					
Lecturer: Assoc	. Prof. Kremka	Petyrova Ass	ist. Prof.	Sergei Radoev, Ph	
Department: Sport and Kinesitherapy					

#### **Summary**

Thematic units of content besides focusing on the essence of specificity, priorities and methods of use of different types of exercise, but also on their ability and age intermodal administered with a direction under certain terms and conditions, in other sports, at home, outdoor mass gymnastic compositions and more.

Knowledge is to reward the already existing students in terms of terminology, classifications, means and methods of organizing and teaching. Is an opportunity for experts themselves can select the most optimal variant of content, knowledge and skills development, structuring and implementation of assigned thematic unit that maximizes creative, analytical and personal nature of their pedagogical skills and abilities.

### **Course content**

Education is structured in two modules of 15 hours of lectures and practical exercises. Module-lectures: nature, content and direction of species gymnastics. Psychological and pedagogical features and applications. Motivation, emotional states and processes. Classification, characteristics, structure and phases of gymnastic exercises. Machinery and tools, transformed version of the exercises. Sketch of gymnastic exercises and complexes. Gymnastic equipment in other sports. Development of physical properties by means of gymnastics. Content, location and characteristics of the teaching methodology. Age characteristics and applicability of different types of resources from gymnastics. Organization and conducting competitions in gymnastics. Injuries in gymnastics. Principles, care and safekeeping. Furniture and equipment in the gym, ... Mass gymnastics compositions productions. Entity selection and structuring devices. Second modified exercises: organization and conducting classes in gymnastics. Structure, requirements, selection and psychopedagogical skills to implement. Preparation and implementation of a set of exercises with gymnastic character applicability in other disciplines on a given topic with a focus on the preparation and execution of complex gymnastic exercises with a particular focus on three different age groups for independent activities. Complex activities at home. Preparation and implementation of a mini gymnastics composition set motor and musical accompaniment.

## **Teaching and assessment**

Training is conducted by using multiple graphs, drawings and sketches to illustrate through overhead projector and a multimedia presentation. In teaching using examples of longstanding scientific methodical and practical activities of the holder of the discipline. The evaluation is formed by:

1. Current control during their studies during the semester.

- 2. Developing paper on various topics.
- 3. Exam

# COURSE DESCRIPTION METHODOLOGY OF SKI

 ECTS credits:
 2
 Classes per week:
 1L+0S +0E+1LE

 Assessment:
 written exam
 Course type:
 elective

 Semester:
 I / II

 Course coordinating department:
 Sports and Kinesitherapy, Faculty of Public Health and Sports

Lecturer: Assist Prof. Ivan Glushkov, Ph D Department: Sport and Kinesitherapy

#### **Summary:**

Training on the discipline "Ski" aims to provide theoretical and practical preparation of the masters form master programme Kinesiology and Sport Kinesiology, related with:

1. Theoretical backgrounds aimed at further study of the multi-faceted capabilities of skiing development human movement.

2. Practical training of masters, explaining in a laboratory environment and field changes in locomotion and differentiation of motor function through and in the medium of skiing.

# COURSE DESCRIPTION METHODS OF TEACHING TENNIS

ECTS credits: 2.0 Form of assessment: exam Semester: I / II Weekly classes: 1L +0 S +0 +1 P Lab Course status: Selective

Departments involved: Department Sports and Kinesiotherapy Faculty of Public Health and Sports Lecturer: Chief assistant Daniela Tomova, PhD E-mail: <u>danitomova@swu.bg</u>

Assistant: Dimitar Tomov, PhD

## Annotation:

This subject aims to familiarize the students with the basic technical and tactical approaches in tennis, with the means and methods of their study, the grounds, the equipment and the materials for practicing the sport of tennis as well as with organizing and conducting competitions in tennis.

## **Course content:**

This course is structured in two modules of 15 hours of lectures and practical sessions. The first module consisted of lectures - General characteristics of the sport of tennis. History of tennis in the world and in Bulgaria. Terminology of tennis. Types of grips and their application. Baseline and expectant position. Study on the technique of the groundstrokes (strokes played after the ball has bounced).

Theoretical and biomechanical analysis. Learning the technique of initial shots, overhead, lob /lobes/ and specific strokes. Returns. The tactic of the game single. Tactical thinking.

Tactical combinations in single game. Styles of game. The tactic of the games in pairs Methodology in study of the technique of tennis. General guidelines and requirements for training of technical methods Education tools

. The Tools and methods of sports training in the stage of preliminary preparation. Selection of children and tasks. Module Two - exercises- Systematic of strokes in tennis. Grips and application. Baseline and expectant position. The Preparatory exercises with ball and racket. Learning of the technique of strokes played after the ball has bounced. . Tactics of single game. Tactical thinking, Tactical combinations in the single-player game. Styles of game. Tactics of the game in doubles and mixed doubles. Tactical tasks depending on the degree of preparation.

## Technology of teaching and assessment:

At the end of the course, the students will be assessed on the basis of their results of mastering the technical and tactical skills in tennis demonstrated in educational methods work

. The used method of assessment is the writing exam asking two questions.

Twice the score of written exam is summed with the score of the current control. The final semester score is the average of the sum of the evaluation of the current control/monitoring and the evaluation of the written exam

## COURSE DESCRIPTION METHODS OF TEACHING VOLLEYBALL

ECTS credits: 2 **Classes per week:** 1L+0S+0E+1LE written exam **Course type:** elective Assessment: Semester: I/II**Course coordinating department:** Sports and Kinesitherapy, Faculty of Public Health and Sports Lecturer: Prof. Kiril Aladiov. Ph D E-mail : kirilaladjov@swu.bg Assist. Prof. Viktor Hristov **Department: Sport and Kinesitherapy** 

## **Summary:**

Activities on the course "Volleyball" are intended for first-year students for Master "Master" in "Kinesiology". In developing this program sports discipline dealing with issues related to management of elements of the technique of playing volleyball, learning some individual and group tactical action necessary for its implementation, and racing rules.

The main objective of the course "Volleyball»'s future professionals "Kinesiology" to acquire knowledge and to develop practical skills for individual elements of the art of the game and tactical skills for its implementation. Mastery of specific funds volleyball game will allow for increased functionality of the students related to their comprehensive training.

## Course content distsiplina

History of volleyball. Rules organized. Playing field. Players. Judges Analysis of key elements of the technique of playing volleyball. Technical and tactical demands of the game. Features. Volleyball game tactics in attack and defense. Individual and collective action in the volleyball game. The role of physical attributes and their development. Learning of feeds. Using both hands up and their varieties Learning about the main types of primary hits. Plain bottom kick. Upper / plain and meandering / kick. Learning the crash. Ramming in the direction of strengthening. Ramming a reversal entry. Learning about the blockade and protective action Single blockade. Individual tactical actions. Tactical group. Developing different physical properties

## Teaching and assessment:

Training is conducted in a traditional manner with the approved use in the teaching of special purpose diagrams, drawings, tables and figures to illustrate, where possible and multimedia. Use visualization methods, explanations interview. It is envisaged that at the end of each topic to devote time to questions, answers, and other discussions. After five sessions, students take practical examination in mastering the elements of the art of the game and demonstrate tactical skills and knowledge. There are two written tests to check knowledge of the rules of volleyball game. After of the training course is laid theoretical (written) and practical exam on all the material. Summary final grade is complete the following indicators: active participation of students in various activities, the results of the tests and the result of the theoretical and practical tests. From an examination is released, if the current control and written supervisory assessment was at least very good.

Preparing for the semester examination is done by developing a syllabus for the exam, sample questions for current control, to support self-training students for successful participation in the exam.

# **COURSE DESCRIPTION** YOGA

ECTS credits: 2 Assessment: written exam **Classes per week:** 1L+0S +0E+1LE elective **Course type:** 

Semester: I/II

Course coordinating department: Sports and Kinesitherapy, Faculty of Public Health and Sports

Lecturer: Stanko Stankov - yoga

E-mail : stanko stankov@yahoo.com **National Sport Academy** 

## **Summary**

YOGA elective subject aims to introduce students degree "Bachelor" and "Master" degree specific to the theory and practice of classical (CMOS) Yoga. Viewed care is yoga (kriva voga) and diet recommended by them. As a practical system whose efficiency is realized mostly in pursuit - the main goal of the course is to increase the mental and physical ability of an individual through daily yoga training - complex, whose main task is health, long and happy life, and most already successful in their careers kinesiology. The main objective of the course is to enrich students' acquisition and mostly practical skills to enhance their physical culture by reaching the normal range of motion in joints, which ultimately will lead to practical use both in kinesiology and District SPORTS Kinesiology.

Course content distsiplina:

History and nature of yoga. Main types of systems of Yoga. Elements of Classical Yoga and its relevance to modern life. Hatha Yoga - personal discipline to achieve good health and longevity. Mental discipline in Yoga - bet for success in life. Yoga and vazdarzhatelnost. Hygiene yogis. Yogic recommendations in attending theoretical exams session. Practical applicability of yogic practice elements kinesiotherapists. Asanas Pranayama concentration dynamic performance of asanas and Pranayama. Basic daily yoga session Relaxation Meditation heating complex. Other exercises for the day: "Five exercises Brahmachari" I and II complex Iyengar.

## **Teaching and assessment**

Training is delivered in a manner approved by the classes take place in the gym. It sports clothing - sweatpants and a large towel. Evaluation of results during the course Yoga is done by displaying a theoretical curriculum and practical skills and practical learning of classical Yoga discipline evaluation is based on a theoretical and practical examination

Evaluation is a five-point system, the greater the severity of the practical part of the exam.

# **COURSE DESCRIPTION**

Course Title: Semester:	BIOPHYSICS 1/2
Type of presentation:	Lectures and Seminars
Hours per week AS / SS:	1 Lecture hours + 1 Seminar / AS
ECTS Credits:	2
Lecturer:	Assoc. Prof. Dr. Plamen Gramatikov, Ph.D.

## Assist. Prof. Maria Kokova, Ph D

## Department: Physics Department; Phone: +359 882 818 557; E-mail:

Course Status: Elective course in the Kinesiology M.Sc. Curriculum

Short Description: The thermodynamic approach at study of alive systems. Entropy of alive Nature. Basics of non-equilibrium Thermodynamics. Thermodynamics and information. Phase transitions. Intermolecular bonds. Fractal structures and scales. Biopolymer Physics. Biomembranes. Unique anomalous properties of Water. Solitons.

Course Aims: The course is based on the preceding compulsory course on Physics and other specific courses of the curriculum. The program includes basic knowledge of the most important physical phenomena in biological systems at the molecular, cellular and organism level. Emphasis is placed on structure, properties and role of water for the functioning of biological systems and the structure of the most important bio organic compounds. The aim is to give to the students some basic knowledge about the most important physical phenomena in biological systems at the molecular, cellular and organism level and they to become familiar with the basic physical problems, specific approaches and methods when studying self-organization of matter.

Teaching Methods: Lectures and Seminars with decision of theoretical and practical tasks. From methodical point of view the material is arranged from the thermodynamic approach at study of alive systems via Biopolymer Physics to the basic models of water structure and its properties.

Requirements/Prerequisites: Basic knowledge on General and Molecular Physics.

Evaluation Method: An intermediate test K conduct through the semester; Written final exam upon the lecture course.

Rating: = 0,3.K + 0,7.(Exam)

Inscribing for tuition: By request at the end of the previous semester.

Inscribing for exam: Agreement with the lecturer and the Students Service Department. References:

- 1. Gramatikov P. S. Theoretical Biophysics, Blagoevgrad, 1998 (in Bulgarian).
- 2. Florov R. J. Thermodynamics of Biosystems, BAS Publ. Hous, Sofia, 1988 (in Bulgarian).
- 3. Marinov M., Biophysics, Sofia, 2003 (in Bulgarian).
- 4. Grasberg A. Y., A. R. Hohlov. *Statistical Physics of Macromolecules*, Science, Moscow, 1989 (in Russian).

Abbreviation: AS: Autumn Semester SS: Spring Semester

# COURSE DESCRIPTION SPA THERAPY

ECTS credits:	2	Classes per week:	1L+0S +0E+1LE		
Assessment:	written exam	Course type:	elective		
Semester:	I / II				
<b>Course coordinating department:</b> Sports and Kinesitherapy, Faculty of Public Health and					
Sports					
Lecturer: Assoc. Prof. Rumiana Bahchevandjieva, Ph D					
Department of Sports and kinesitherapy					

29

## **Summary**

The aim of the training is to provide knowledge of spa therapy and physiotherapy an important part of the recovery and treatment of patients with a number of diseases. A large number rehabilitation hospitals, spas and spa hotels offer spa sectors (water therapy), medical treatment, physical therapy. This requires Kinesitherapeutists and kineziologist to work in tourism and balneotherapy spa, have a thorough knowledge of these disciplines.

## **Course content**

Physiological effects of spa therapy on the human body, types of spa treatments, spa tourism - characteristic. Balneotherapy - nature, modern medical and social importance and methods of application of mineral water in different types of diseases. Spa treatment - types of spa treatments, procedures, dosages, medical spa tourism. Methods of application of mineral water in various diseases.

## **Teaching and assessment**

The course is delivered in the lectures and seminars. Is assessed both during lectures and during exercise during the semester through checks and questions - oral and written. The course ends with an examination consisting of written questions from students from predefined syllabus. The exam lasts 3 hours and is followed by an oral interview with the student investigator. The final evaluation report the results of the tests and the exam at a ratio of 50% to 50%.

ECTS credits:	2		Classes per week:	1L+0S +0E+1LE	
Assessment:	written exam		Course type:	elective	
Semester:	I / II				
Course coordinating department: Sports and Kinesitherapy, Faculty of Public Health and					
Sports	Sports				
Lecturer: Prof Ivan Topuzov, Ph D Assist. Prof. Kristina Jivkova Grancharska;				ova Grancharska;	
Tell.: 0899 147 701, De		Dep	<b>Department:</b> Sports and Kinesitherapy		
E-mail: ivan_topouzov@swu.bg			Tel.: 0878 755 006 ; E-mail:		
Department of Sports and kinesitherapy					

# COURSE DESCRIPTION Biostimulation IN SPORT

## **Summary**

Biostimulation course introduces students to sports to the functioning of the digestive system, digestion and metabolism in exercise and sport. Discussed are nutrients energiynyat and qualitative composition of food. Special attention is paid etc. "Functional foods" (antioxidants and probiotics) and supplements available on the Bulgarian market. The principles utilized for the preparation of food ration, and separate rules hipoenergiyno diet and nutrition for athletes from different sports disciplines and categories. The methods and means of Biostimulation and rehabilitation of athletes, incl. danger of a drug.

## Content

Functioning of the digestive system, digestion and metabolism in exercise and sport. Energy balance. Sports cellulite. - Nutrients as a source of energy and information. Energy and qualitative composition of the diet. Nutrients. Food. Tables of composition and content of the food. - Functional Foods. Vitamins, minerals and water. Oxidants and antioxidants. Probiotics. Nutritional Supplements on the Bulgarian market. -. Nutrition in sport. Principles of preparation of food ration. Separate hipoenergiyno and nutrition. Nutrition for athletes from different sports disciplines and categories; regulations. - Biostimulation body - methods and tools. Methods and tools for recovery in athletes. Doping.

## Technology training and assessment

Students are introduced to contemporary theoretical and nutrition Biostimulation through lectures and seminars. Carry out one or two tests for continuous assessment. The final evaluation is conducted with a written exam.

# COURSE DESCRIPTION SPORTS MANAGEMENT

ECTS credits:	2	Classes p	oer week:	1L+0S +0E+1LE
Assessment:	written exa	m <b>Course</b> t	уре:	elective
Semester:	I / II			
<b>Course coordinating department:</b>		Sports and Kinesitherapy,	Faculty of P	ublic Health and
Sports				

Lecturer: Prof. Atanas Georgiev, Ph D

E-mail: <u>naskoag@swu.bg</u>

Department of Theory and methodology of physical education, Faculty of Education

## **Summary**

Changes in society have led to major changes in the organization and management of Bulgarian sport. There was a serious need for new leadership in a changed economic, market relations. This requires training and a new frame type, managers in various social activities including sports. The Programme in sports management prepares future masters by learning the basics of sports law, economic policy and finance in sport with understanding what a sports product and sports marketing application based on sports law. Students are introduced to different types of management and the organization of marketing research. An important element of the program is to familiarize with the different types of advertising, sponsorship and project preparation.

# **Course content**

General cybernetic principles of governance and management in sport. Fundamentals of Management. Sports Management. Financing of sport. Marketing. Right. Fundamentals of sports law. Types of sports management. Management in the preparation of project management in sport.

## Teaching and assessment

The course is conducted in a traditional manner with the approved use of multiple graphs, drawings and sketches to illustrate through the overhead projector. There is a ready multimedia presentation of the course, if we are given such a technique. In teaching using examples of long experimental research holder discipline. It is written. It covers three theoretical questions from syllabus, which is available to students at the beginning of the semester. function evaluation is an assessment of the current semester and the written exam. It reports the results of monitoring and evaluation of the test in the ratio 4:6 contingent parts.

# COURSE DESCRIPTION SPORTS TRAUMA

ECTS credits: 2 Assessment: written exam

Department of Sports and kinesitherapy

Semester: I/II

Classes per week:1L+0S +0E+1LECourse type:elective

Course coordinating department:Sports and Kinesitherapy, Faculty of Public Health andSportsLecturer:Prof Ivan Topuzov, Ph DAssist. Prof. Natalia PetrovaTell.:0899 147 701,Department:Sports and KinesitherapyE-mail:ivan topouzov@swu.bgE-mail: natalia.petrova@swu.bg

## **Summary**

Students get acquainted in detail with the most important element of Pathology sports injuries. Sports injury and illness are the result of sports activity, whether it is organized or unorganized, collective or individual. Sports Physiotherapists educators and must be familiar with the specifics of sports injuries and treatment, the need to diagnose it in time to render effective aid equipment, and if necessary seek timely medical intervention. So, as of this depends largely on the effectiveness of treatment, these skills are essential. This is especially important for professional and junior sport, where is related to huge material resources, successful sports careers and made human lives. For the proposed training program is indispensable knowledge of anatomy, physiology and functional diagnosis of musculoskeletal system, biomechanics, and pattobiomecanics, pathokinesiology.

## **Course content**

Diseases of athletes sports injuries – macrotrauma, microtrauma (endogenous trauma). Rani. Bleeding and bleeding. Infections. Frostbite and burns. Basic principles of first aid, treatment and rehabilitation of sports injuries

## **Teaching and assessment**

Training is conducted in a traditional manner with the approved use of multiple boards, charts, tables, drawings and sketches to illustrate through the overhead projector. Evaluation of results during the course sports injuries is consistent with Ordinance  $N_2$  21 of the Ministry of the September 30, 2004 to implement the system of accumulation and transfer of credits. The total credit course is 2.0 credits (1 auditorium and extracurricular employment). It is written. It covers two theoretical questions from the syllabus, which is available to students.

# **COURSE DESCRIPTION Sports animation in Tourism**

ECTS credits: 2.0 Assessment form: Examination Term: I/II Methodical Department Department of "Sports and Kinesitherapy" Faculty: Public Health and Sports Per Week 1l+1se+0le+0pe Status: Optional Lecturer: Associated Professor Stoyan Ivanov E-mail: <u>dekan.st.ivanov@swu.bg</u>

#### Annotation

The optional subject "Sports animation in tourism» aims at providing theoretical training of masters students and is related to the examination of sports animation as a kind of kinesiological activity. Theoretical training is based on innovative pedagogical theories and technology on which methodical- practical training of master students in sports Kinesiology is based on - the specification of formation motor skills and habits and knowledge of their practical realization in and through sport animation. The course is related to other subject like geography of tourism, types of tourism and tourism practices, types of sports animation activities, types of sports biomechanics that are included in sports animation and others.

#### Content

Types and factors of tourist animation. Nature and characteristic features of the psycho-physical recreation. Medical and biological bases of sports animation activities - sports and health (general characteristics of the physical development, physical fitness and neuro-psychological reactivity of the person). Regulation of the activity of the organism under different sports animation programs and kinesiological activity. Increasing the functionality of the human abilities in terms of sports animation. Sports animation in mountain resorts. Skis and skiing, snowboarding. Mountaineering and climbing. Orientation. Goals, structure and organization of the Mountain Rescue Service. Sports animation in seaside resorts. Water Rescue Service of the Red Cross. Factors determining sports animation product, material and technical base for sports animation.

## Technology of education and assessment

The organization of the education is aimed at creating conditions for mastering the educational concent and application of knowledge and skills in the masters' practice. To solve these problems the lecture course contributes to the acquisition of theoretical knowledge about the technological possibilities of sports animation for recreation. Masters are assist with individual and group tutorials, methodological guidelines, by focusing on basic and additional literature sources and other forms of assistance. An integral part of the training is the evaluation of the master including monitoring and final evaluation. Assessment is a process of presenting analyzing and discussing the results of training and it is not a single act. The final evaluation of the masters' knowledge is generated from: the testing in the lectures (2 tests) and the final examination.

## COURSE DESCRIPTION OLYMPIC EDUCATION SYSTEM

ECTS credits: 2.0 Assessment form: Examination Term: I/II Methodical Department Department of "Sports and Kinesitherapy" Faculty: Public Health and Sports Lecturer: Assistant: Chief Assistant Daniela Tomova Per Week 11+1se+0le+0pe Status: Optional Associated Professor Stoyan Ivanov E-mail: <u>dekan.st.ivanov@swu.bg</u>

## Annotation

The aim of the course is to provide knowledge about the Olympic Movement and Olympism as a highly ethical and aesthetic achievement of the ancient world and the development of the Olympic ideas in modern society. The modern Olympic movement is one of the biggest phenomena of our time, an important social factor, which includes hundreds of millions of athletes from all corners of our planet. Olympism, which is the core of modern sport and the Olympic Charter is the basis for the development of the cooperation between youth from around the world in the activity of the NOC, IOC, SMBs and other public and state structures. Educational practices in Europe and the whole world on Olympic education not only in the school system but also out of it are discussed.

## Content

Olympism and the Olympic Movement. Modern aspects of the Olympic Movement; Systems for physical education in the Ancient East, Egypt, China, India, Persia. Religious and other games. Theory and history of yoga, kung fu, gymnastics and others. Systems for physical education in ancient Sparta and ancient Athens. Founders and functionaries of the modern Olympic movement. Bulgarian participants in the bodies of the IOC and the Olympic Movement Systems, Physical Education / German, French, Swedish, Czech, gymnastic systems, English sports and Russian national system. Humanist views of teachers from Italy, France, England, Germany, education, education and physical education Physical Culture in Ancient Rome. Views on physical culture of ancient Greek and Roman pedagogical thinkers.

## Technology of education and assessment

The course is devided it lectures and seminars. Of particular importance are the skills for work which is done on masters own, the use of historical and pedagogical literature and writing essays and creating papers on specific topics - alone or in a group. The process of learning is assissted by the use of visual materials (photographs) and computer animation. Students' take an exam which includes writing a paper on a selected topic of the material and examination on the main topics from the content. Those students who have a positive assessment on their papers are allowed to take the exam. The final ball grade is based on the assessment of the written paper plus the result from the final examination. The different levels student assessments are based on the acquired knowledge and skills to deal with historical facts and to make comparison and analysis.