



UNIVERSITY of INFORMATION
TECHNOLOGY and MANAGEMENT
in Rzeszow, POLAND

MEDICAL FACULTY

University of
Information Technology
and Management
based in Rzeszow

ORGANIZATIONAL STRUCTURE |
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MEDICAL FACULTY

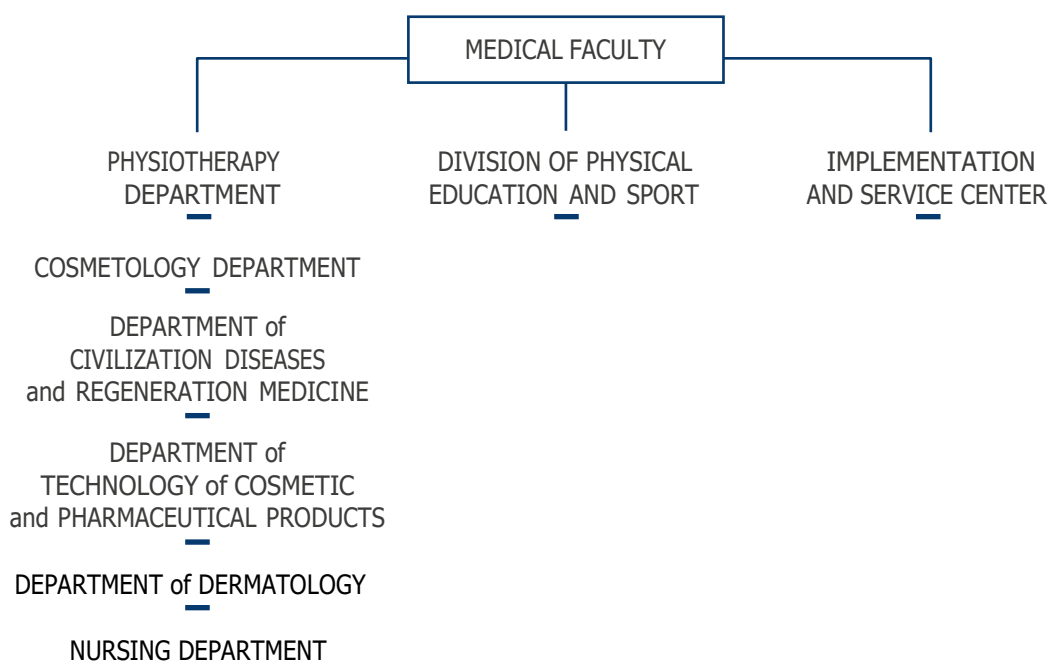
University of
Information Technology and Management,
based in Rzeszow
(to 30.09.2019 MEDICAL FACULTY)

SCIENTIFIC CATEGORY
IN PARAMETRIC EVALUATION OF
MINISTRY OF SCIENCE AND HIGHER EDUCATION
for years 2013–2016

UITM Medical Department during the last categorization obtained **category B**.

ORGANIZATIONAL STRUCTURE of MEDICAL FACULTY (since 1.10.2019)

In its structure MF has research and teaching units (Departments), teaching unit (Division) and service center.



FIELDS OF STUDY AT MEDICAL FACULTY

FIRST-CYCLE STUDIES

Dietetics – extramural studies

Cosmetology – full time and extramural studies

Physiotherapy – full time and extramural studies

UNIFORM MASTER'S STUDIES

SECOND-CYCLE STUDIES

Physiotherapy – extramural studies

Cosmetology – extramural studies



DESCRIPTIONS of FIELDS of STUDY

DIETETICS

In modern society, there is observed an increasing interest in diet, healthy lifestyle and food production technology. Dietetics is a scientific discipline that you can discover all your life. Knowledge of nutrition is subject to constant development and modification, as more and more new reports from the world of science are constantly appearing. The dietitian combines within one profession the therapist's and food technologist's competences, acquiring qualifications and entitlements to work in various places, both in healthcare or hospital management, as well as in classic gastronomy.

First-cycle studies in the field of Dietetics last 6 semesters and end with obtaining a bachelor's degree. Education in the field of study has been conducted since the 2014/15 academic year.

The mission of education during studies in the field of Dietetics is teaching in accordance with the art of EBM (evidence-based medicine). It consists in the ability to use reliable scientific evidence in clinical proceedings. Therefore, the classes are conducted by renowned scientists, as well as specialists with many years of professional experience: practitioners, clinical dietitians, food technologists and personal trainers.

The university also places emphasis on acquiring practical skills at a high level in the field of nutrition of healthy and sick people. Therefore, classes are taught by renowned professors, doctors, and specialists with many years of professional experience.

All subjects at the first-cycle studies in Dietetics are divided into two blocks: main, obligatory for all, and optional (optional and specialization), within which students have the opportunity to choose subjects and specialties.

*The following specialties
are offered in the field:*

DIETETIC COUNSELING

The purpose of this specialty is to educate professional staff prepared to give dietary and nutrition advice. The graduate will be able to solve specific problems including providing nutritional advice, also in the area of nutritionally-dependent diseases. They will acquire qualifications to skillfully cooperate with doctors and other professional healthcare workers, manage the staff of mass catering establishments, and conduct marketing and managerial activities in this area. They will competently assess the functioning of the food and nutrition market in Poland.

Graduates will be prepared to work in mass catering establishments, catering establishments, tourist enterprises, as well as in catering services. They will also be prepared to start their own business in the field of consulting services related to healthy nutrition. In addition, they can be competent partners for personal trainers and coaches.

SPORTS NUTRITION

The purpose of education in this specialty is to prepare dietitian specialists in the field of nutrition and dietary support for people practicing amateur and competitive sports as well as for people using fitness clubs and wellness centers.

Graduates will have the knowledge and skills to consciously plan meals for themselves and others. They will learn how to count calories and determine the proportions of substances necessary for the body. Thanks to knowledge on this subject they will be able to consciously control and increase their strength, physical fitness and endurance. The acquired knowledge will allow them to construct an optimal diet for a human being. Students will be able to give professional advice on the proper hydration of the body, on avoiding very dangerous acidification, and thus – on improving the figure and overall condition.

Graduates will be able to find and choose appropriate dietary supplements, nutrients and fitness enhancers. Thanks to this, being e.g. a personal trainer or working with such a person, they will create an optimal nutrition plan.

Studies in the field of dietetics at UITM offer a wide range of practical classes, including 960 hours of professional practice. These include, among other things, preliminary practice in hospitals, dietary counseling centers, mass catering establishments and health care facilities. Students also have the opportunity to participate in lectures and classes, including classes conducted in chemical, analytical and computer laboratories.

The highest level of education is guaranteed due to the employment of innovative teaching methods by the teaching staff. Dietetics students as one of the few in the country have free access to several applications during classes and after the classes, including the professional dietetic program DietetykPro. This solution allows you to complete the task outside the University and gives you the opportunity for extra study at any time. In addition, DietetykPro has, among other things, a database of 10,000 products and dishes, a comprehensive nutritional interview, balancing 58 standards, diet calculators, modern printouts and patient records.

Dietetics, due to its interdisciplinary nature and continuous development of medical sciences, covers increasingly wider areas not only in the field of science, but also in the broadly understood production and services sectors.

Strategic partners in the field of Dietetics are:

- Olimp Laboratories;
- The National Center for Agricultural Support;
- Zielarnia Lawenda and Euroimmun DNA.

During their studies, students can obtain, without additional fees, the certificate "Celiac disease and primary lactose intolerance in the practice of a dietician", offered by the strategic partner of the course – EUROIMMUN DNA.

PHYSIOTHERAPY

Physiotherapy is a medical field recognized as one of the five most developmental in the world. The observed demand for specialists in this field is constantly growing both in the country and abroad. Early introduction of physiotherapeutic interventions in the case of existing disorders of body functions and body structures as well as widespread implementation of preventive measures ensures better health condition of the society and significant savings for the state.

Currently, in the field of Physiotherapy there is parallel education in the first-cycle and second-cycle studies and from the 2017/2018 academic year – in connection with the entry into force of the Act of September 25, 2015 on the profession of physiotherapist, there is also education at uniform master's studies.

This Act regulates the qualifications necessary to practice the profession of Physiotherapist, specifies the rules for exercising this profession, including obtaining the right to practice the profession, vocational training, post-diploma training and professional liability. It also specifies in detail the requirements that must be met by a person who has the right to practice the profession of physiotherapist. In the current legal situation, the Master of Physiotherapy has a much higher professional qualification than a licensed Physiotherapist. Graduates of master's studies have the right to provide all types of services: qualifying patients for rehabilitation treatments, commissioning of medical devices and orthopedic supplies, giving opinions and rulings on the functional state of patients and on the course of the rehabilitation process.

The graduates of the field will acquire comprehensive knowledge in the field of physiotherapy and related medical disciplines, which will allow them to prepare for independent professional practice as well as to operate within a therapeutic team. Practical classes (exercises, laboratories, practical classes and professional trainings) are conducted in specialist laboratories and in practical training facilities under the guidance of teachers of practical classes and supervisors of professional trainings. Their aim is to verify the theory and to acquire professional skills in working with patients with various dysfunctions.

UITM Physiotherapy students have the opportunity to use their own scientific and teaching base at the UITM Campus in Kielnarowa which includes: teaching buildings, specialized laboratories, practical classes rooms, a set of facilities for recreational and sports activities, facilities for wellness (Spa & wellness), tourist areas, paying fields and sports halls. Thanks to extensive cooperation with hospitals in Rzeszów and nearby, rehabilitation rooms, Uzdrowisko Rymanów S.A., Uzdrowisko Horyniec Sp. z o.o. and with the Reh-Mediq Rehabilitation and Medical Center in Kielnarowa, students can have their professional practices and practical classes in health care units of various profiles.

Strategic partners in the field of Physiotherapy are:

- MEDYK Medical Center in Rzeszów
- and Non-public Health Care Center "RUDEK" Medical Rehabilitation Center.

COSMETOLOGY

Increased public awareness in the area of care for beauty, correcting its imperfections and selection of cosmetic preparations contributed to the rapid development of the demand for professional cosmetology services and thus competent, comprehensively educated cosmetologists.

Cosmetology is a profession that a graduate obtains after completing their first-cycle studies, but the second-degree studies allow them to fully shape the professional profile of the graduate by acquiring advanced and interdisciplinary general medical, professional knowledge and practical skills. UITM offers comprehensive training of cosmetologists by offering both first-cycle and second-cycle studies.

Cosmetology is an interdisciplinary field of study combining knowledge and skills in the field of medical sciences, pharmaceutical sciences and health sciences.

Cosmetology is a field of study of practical profile. Classes are conducted in specialized laboratories, including Cosmetology Laboratory, Visage and Stylization Laboratory, Cosmetic Chemistry Laboratory, Immunology and Biochemistry Laboratory, General Biology Laboratory, Massage Laboratory. This ensures the acquisition of manual skills in the area of care, beauty and therapeutic procedures.

First-cycle studies in the field of Cosmetology last 6 semesters, are conducted in full-time and extramural mode. In the course of studies, there are subjects such as dermatology, cosmetic chemistry, human anatomy and physiology, nursing cosmetology, beauty cosmetology, aesthetics, and cosmetic recipe. The student has the option of choosing subjects according to their own interests complementing the block of basic and major subjects (Flexible Study System – FSS). In the course of studies there are provided 960 hours of professional practice.

*The following specialties
are offered in the field:*

First-cycle studies

AESTHETIC COSMETOLOGY

The specialty Aesthetic cosmetology is a perfect complement to practical skills in basic podological procedures, nail stylization and nail decoration, as well as makeup in camouflaging face and skin imperfections. This specialty prepares you for work in beauty salons – for independent planning and performing care and beauty treatments according to the client's needs.

COSMETICS MANUFACTURING TECHNOLOGY

The specialty Cosmetics manufacturing technology is an extension of practical skills in the field of cosmetic chemistry and cosmetic recipes. It is a unique specialty on a national scale, giving the opportunity to acquire skills in developing recipes for basic forms of cosmetics and analyzing their properties. This specialty prepares you for work in cosmetic and pharmaceutical laboratories, pharmacy cosmetics departments, and enterprises dealing in the production and distribution of care and colored cosmetics.

BIOLOGICAL REGENERATION AND WELLNESS

The specialty Biological regeneration and wellness, prepares for professional customer service in SPA and Wellness centers, beauty salons located in prestigious hotels, spa resorts in the field of planning and performing care and therapeutic procedures, using massage and relaxation techniques.

For ambitious first-cycle students of Cosmetology, 10-hour workshops are organized as part of the "I want more" initiative, such as: Designing cosmetic preparations, Cosmetic anti-cellulite treatments, Professional color analysis, Regenerative medicine.

Second-cycle studies in the field of Cosmetology last 4 semesters and are conducted in the extramural mode. In the course of studies there are taught the following subjects: skin physiology and patho-physiology, skin oncology, plastic, post-traumatic and aesthetic surgery, therapeutic cosmetology, natural cosmetic raw materials, recipe of cosmetic preparations, phytocosmetics and dermocosmetics, and rehabilitation. The student has the option of choosing subjects according to their own interests complementing the block of basic and specialization subjects (Flexible Study System – FSS).

*The following specialties
are offered in the field:*

Second-cycle studies

APPLIED COSMETOLOGY

This specialty prepares you for professional performance of advanced cosmetology treatments in line with the latest trends and effective cooperation with a specialist doctor. The specialty program, among other things, includes: Problem skin care treatments, Makeup in dermatoses and oncologic diseases, Cosmetics and care of male skin.

COSMETIC PREPARATIONS DESIGN

This specialty is an extension of practical skills in the field of formulation of cosmetic preparations, including cosmetics design in accordance with modern trends and production process design, as well as physicochemical analysis of individual cosmetic forms. The specialty program includes, among others: Cosmetics biotechnology, Cosmetics technology and design as well as Industrial cosmetics production.

In the course of studies, there are provided 480 hours of professional practice.

Within the field of Cosmetology, in the summer semester there is also organized **the Specialist Summer School of Podology**. During 12 hours of workshops, students have the opportunity to improve their skills in the field of therapeutic pedicure and fixing a corrective clamp on the ingrown toenail.

Additionally, there is offered an optional specialty in **Natural Cosmetics with elements of phytotherapy**. The specialty program includes 65 teaching hours (lectures and laboratory classes) aimed at familiarizing the student with the principles of designing and manufacturing cosmetics based on natural raw materials, with the principles of certification of natural cosmetics as well as with the basic principles of phytotherapy.

Strategic partners in the field of cosmetology are:

- Ziaja
- Bielenda Professional

NURSING

The demand for educated medical staff in the field of nursing is caused, among others, by deteriorating health condition of the society, increased incidence of civilization diseases which are a challenge for the health care system, and the aging of the society, often requiring long-term medical care.

A nurse is not only a member of medical staff in a hospital, but also in a medical clinic or a social welfare home. The shortage of nursing staff is also associated with the emigration of educated nurses aged 30–40 contributing to the staff of foreign medical centers. Currently, people say there is the so-called generational gap in the profession of a nurse – the average age of nursing medical staff in Poland is 51 years. Both, civilization diseases affecting an increasing number of people, including the young, as well as technological advances in medicine require an increased investment in the education of specialized nursing staff which is a deficit profession not only in Poland, but also in the European Union.

From March 2020, as part of the Medical Faculty at UITM the education in the field of Nursing is planned. Recruitment for full-time first-cycle studies has now started. Studies in the field will last 7 semesters. The university has received positive opinions from the National Accreditation Council of Nurses and Midwives Schools and



the Polish Accreditation Commission and obtained the right to conduct education in the field of Nursing. Nurse is a profession which the graduate obtains after completing first-cycle studies by acquiring comprehensive medical and medicine-related knowledge, practical skills as well as necessary social competences which are crucial when performing nurse's professional activities.

The study program for the field of Nursing was developed in accordance with the education standards specified in the regulation of the Minister of Science and Higher Education. It provides the opportunity to develop the correct profile of a nursing graduate capable of providing health services in the field of recognizing the health and care needs of patients, conscious planning and taking care of the patient, independent provision of preventive, diagnostic, therapeutic or rehabilitation services within a specified range. The graduate of the course through the implementation of individual blocks of subjects (general, basic, social sciences, basic nursing and specialist care), will be prepared to participate in the diagnostic and therapeutic process through the ability to professionally cooperate with doctors and other members of the therapeutic team.

Due to the practical profile of studies, at the field of Nursing strong emphasis is put on the acquisition of knowledge, skills and social competences of a practical nature. The practical nature of the studies is ensured by students' practical classes (total 1100 hours) and professional practices (total 1200 hours). A significant part of the classes will be conducted in small groups (classes and laboratories, practical classes), which will undoubtedly increase the effectiveness of the teaching process. The graduate of the first-cycle studies in Nursing will have extensive medical, specialist and social knowledge as well as skills and competences entitling them to work in public and non-public healthcare facilities such as: hospitals, medical clinics, palliative and hospice care centers, nursing homes, social welfare homes, sanatoriums and rescue system units.



SCIENTIFIC RESEARCH

SCIENTIFIC AND RESEARCH PROJECTS FINANCED FROM EXTERNAL SOURCES

The use of Mongolian herbal blend in comprehensive sun protection of the skin

Head of project: **mgr Timea Sulenta-Pluta** tsulenta@wsiz.rzeszow.pl

The aim of the project is to produce a prototype of a protective cosmetic formulation with high sun protection (SPF 50), which, in addition to direct skin prevention against the negative effects of UV radiation, will inhibit the proliferation of skin cancer cells, such as melanoma or basal cell carcinoma. The active ingredient of the formulation, showing the described action will be a glycol-water extract from a Mongolian herbal mixture, containing powdered fruits of jasmine gardenia (*Gardenia jasminoides*), almond butterweed almond (*Terminaliae cebula*) and almond bellirica (*Terminaliae bellirica*).

Implementation period: **11.2019–04.2020**

Financing: **Podkarpackie Centrum Innowacji (PCI)**

Cosmetic Valley – International Scientific and Implementation Cooperation at the Cosmetology Department

Head of project: **prof. dr hab. Kazimierz Główniak** kglowniak@wsiz.rzeszow.pl

The aim of the project is to establish international cooperation and joint implementation of a research project in the field of natural cosmetology. The subject of research is, among others the possibility of using plant species growing in Kazakhstan as raw materials in cosmetic preparations, the use of modern methods in the analysis of biological activity and the safety of using these raw materials, as well as the preparation of prototype cosmetic preparations. An important part of the project is also the preparation of innovative teaching materials, introducing students from partner universities to the secrets of natural cosmetology. Project partners are: National and Kapodistrian University of Athens [Greece]; Asfendiyarov Kazakh National Medical University of the Ministry of Health of the Republic of Kazakhstan [Kazakhstan]; University of Innsbruck, Institute of Analytical Chemistry and Radiochemistry [Austria].

Implementation period: **2018–2020**

Financing: **Program Narodowa Agencja Wymiany Akademickiej (NAWA)**

The impact of nanoparticles on the tumor metastasis process – epigenetic mechanisms

Head of project: **prof. dr hab. Marcin Kruszewski**

The main aim of this project was to investigate the impact of NPs on tumor growth and metastasis, to clarify the mechanism of observed effects at the level of epigenetic regulation in vivo and in vitro, and to check whether functionalization of nanoparticles surface affects observed effects.

Implementation period: **09.2015–09.2019**

Financing: **Narodowe Centrum Nauki (NCN)**

IMPLEMENTATION of “VOUCHERS FOR INNOVATION”

Landeo Sp. z o.o.

Performing a research service involving the development of an innovative new product in the form of a set for comprehensive skin and body care with significantly improved functional properties as well as defining the technological assumptions of the production process based on the use of the active substance from watercress (*Nasturtium officinale*).

Implementation period: **11.2019 (contract in preparation)–2020**

Financing: **PARP**

Stowarzyszenie Społeczno-Ekonomiczne Absolwent (Graduate – Socio-Economic Association)

Performance of the service consisting in the development of a new product based on an innovative recipe of a cosmetic powder with washing properties in contact with water.

Implementation period: **11.2019 (contract in preparation) 2020**

Financing: **PARP**

RESEARCH FINANCED FROM THE SUBSIDY OF THE MINISTRY OF SCIENCE AND HIGHER EDUCATION

Subject: Innovative raw materials for application in the medical, pharmaceutical and cosmetics industries

The head of subject: **dr inż. Zofia Nizioł-Łukaszewska**

The main aim of the project is to assess in detail the mechanisms of action of the tested substances, including their antioxidant, chelating and anti-inflammatory properties. Raw materials with the most desirable properties will be applied in pharmaceutical, cosmetic and medical preparations.

The project involves the implementation of experimental research in the form of a series of laboratory experiments, followed by a detailed description of their results. The research aims to determine the mechanism of action of selected substances in cell-free and cellular systems. There will be analyzed a number of raw materials that may have practical application in the medical, pharmaceutical and cosmetics industries.

Implementation period: **2019**

Subject: The use of postbiotics in cosmetics

The head of subject: **dr hab. Tomasz Lech**

The main purpose of the research is to assess the properties of the obtained postbiotics and determine the possibilities of their application in various types of cosmetics.

Implementation period: **2017–2019**

Subject: Safety assessment of the use of betalaine dyes in cosmetic preparations using cell-free and cellular systems

The head of subject: **mgr Martyna Zagórska-Dziok**

The aim of the study is to assess the potential use of natural dyes-betalaine dyes, carotenoids and anthocyanins in cosmetic preparations and to determine their mechanism of action in cell-free and cellular systems.

As part of the planned research, a number of compounds, both betacyanic, betaxanthin, carotenoids as well as anthocyanins will be analyzed. The mechanism of action of the tested dyes on skin cells, both cancerous and normal, will be assessed.

Implementation period: **2019**

Subject: Plant extracts as multifunctional ingredients in skin lightening preparations

The head of subject: **dr Katarzyna Gawel-Beben**

The contemporary cosmetics market is looking for effective and safe-to-use discoloration reducing substances. A particularly interesting source of such substances are plant extracts, which due to the complex composition and synergism of the action of individual components, in addition to the brightening effect, can perform additional functions in the cosmetic preparation. The aim of the research planned in the project will be to analyze plant extracts in terms of the possibility of their use as multifunctional components of cosmetics against discoloration.

The research is carried out in cooperation with the employees of the Department of Pharmacognosy with the Laboratory of Medicinal Plants of the Medical University of Lublin (dr hab. Virginia Kukuła-Koch, dr hab. Krystyna Skalicka-Woźniak).

Implementation period: **2019–2020**

Subject: Search for new natural preparations with antimicrobial activity

The head of subject: **dr Anna Głowniak-Lipa**

The aim of the project is to investigate antibacterial and antifungal activity against a broad spectrum of pathogenic microbial species and human microbiota for many plant extracts isolated from herbs of national origin and other geographical zones in order to select species with the highest biological potential.

Implementation period: **2019**

Subject: Cytotoxic and immunomodulatory properties of thiazolidenediones and cannabinoids

The head of subject: **prof. dr hab. Jan Gmiński**

The aim of this research is to determine the cytotoxicity of newly synthesized compounds belonging to the thiazolidenedione group. Compounds of this group are currently widely used PPAR agonists, the activation of which causes apoptotic death of cancer cells. In addition, thiazolidenediones are currently used to treat insulin resistance and type 2 diabetes.

Implementation period: 2015–2017, and since 2018 under the name Antitumor effect of newly synthesized thiazolidenediones in cell cultures in vitro

The aim of the planned research is to determine the molecular mechanism of action and anti-tumor properties of newly synthesized thiazolidenediones (Les-2194, Les-3377 and Les-3640).

Implementation period: **2018–2019**

Subject: Effect of VGVAPG peptide on lipid accumulation and inflammatory process in 3T3 cell lines

The head of subject: **prof. dr hab. Jan Gmiński**

Elastin is the main component of the extracellular matrix in mammalian organisms. Degradation of the elastin-rich extracellular matrix by proteinases derived from serum and secreted from infiltrating platelets, leukocytes, causes the release of short peptides with the properties of cytokines, i.e. EDPs (elastin-derived peptides). In addition, both type 2 diabetes and cardiometabolic diseases have increased levels of EDPs and anti-elastin antibodies.

Therefore, the subject of the proposed research will be determination of the mechanism of action of the peptide resulting from the breakdown of elastin with the conserved sequence Val-Gly-Val-Ala-Pro-Gly (VGVAPG) on metabolism, production of proinflammatory cytokines and lipid accumulation in 3T3 cells.

Implementation period: **2019**

Subject: Quality of life and assessment of postural stability of healthy and sick people under the influence of different factors

The head of subject: **dr Marlena Krawczyk-Suszek**

The main aim of the research is to assess the effectiveness of rehabilitation in patients with dysfunctions in the musculoskeletal system using clinical tests, functional scales, standardized tools and modern diagnostic and therapeutic devices.

Implementation period: **2017–2019**

Subject: Improving upper limb function in children with cerebral palsy under home conditions

The head of subject: **mgr Weronika Cyganik**

The main aim of the research is to characterize the effects of therapeutic impact based on the implementation of a dedicated exercise program, improving under home conditions, on the state of upper limb function in children with hemiparesis aged 6–10 years, in the course of cerebral palsy.

Implementation period: **2019–2020**

PUBLICATIONS



Research findings are published by employees of Medical Faculty in journals indexed in international databases:

PARTICLE AND FIBRE TOXICOLOGY, JOURNAL OF FUNCTIONAL FOODS, NANOTOXICOLOGY, PLoS COMPUTATIONAL BIOLOGY, EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY, FOOD RESEARCH INTERNATIONAL, TOXICOLOGY AND APPLIED PHARMACOLOGY, Nanoscale, EURO-PEAN JOURNAL OF PHARMACEUTICAL SCIENCES, INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, JOURNAL OF BIOLOGICAL CHEMISTRY, CHEMICO-BIOLOGICAL INTERACTIONS, MOLECULES.

LIST OF SELECTED PUBLICATIONS OF MEDICAL FACULTY EMPLOYEES IN 2017–2019:

Holota, Serhii; Kryshchysyn, Anna; Derkach, Halyna; Trufin, Yaroslava; Demchuk, Inna; Gzella, Andrzej; Grellier, Philippe; Lesyk, Roman. Synthesis of 5-enamine-4-thiazolidinone derivatives with trypanocidal and anticancer activity. *Bioorganic Chemistry*, 2019, 86: 126-136. ISSN 0045-2068

Kryshchysyn, Anna; Kaminsky, Danylo; Karpenko, Oleksandr; Gzella, Andrzej; Grellier, Philippe; Lesyk, Roman. Thia-zolidinone/thiazole based hybrids – New class of antitrypanosomal agents. *European Journal of Medicinal Chemistry*, 2019, 174: 292-308. ISSN 0223-5234

Szychowski, Konrad A; Wójtowicz, Anna K; Gmiński, Jan. Impact of Elastin-Derived Peptide VGVAPG on Matrix Metalloproteinase -2 and -9 and the Tissue Inhibitor of Metalloproteinase-1, -2, -3 and -4 mRNA Expression in Mouse Cortical Glial Cells In Vitro. *NEUROTOXICITY RESEARCH*, 2019, 35.1: 100-110. ISSN 1029-8428

Szychowski, Konrad A; Gmiński, Jan. Impact of elastin-derived VGVAPG peptide on bidirectional interaction between peroxisome proliferator-activated receptor gamma (Ppar) and beta-galactosidase (-Gal) expression in mouse cortical astrocytes in vitro. *NAUNYN-SCHMIEDEBERG ARCHIVES OF PHARMACOLOGY*, 2019, 392.4: 405-413. ISSN 0028-1298

Bejer, Agnieszka; Probachta, Mirosław; Kulczyk, Marek; Griffin, Sharon; Domka-Jopek, Elżbieta; Płocki, Jędrzej. Validation of the Polish version of the Western Ontario Rotator Cuff Index in patients following arthroscopic rotator cuff repair. *BMC MUSCULOSKELETAL DISORDERS*, 2018, 19: 1-10. ISSN 1471-2474

Koch, Wojciech; Kukuła-Koch, Wirginia; Komsta, Łukasz; Marzec, Zbigniew; Szwer, Wojciech; Główniak, Kazimierz. Green tea quality evaluation based on its catechins and metals composition in combination with chemometric analysis. *MOLECULES*, 2018, 23.7: 1-19. ISSN 1420-3049

Kukuła-Koch, Wirginia, et al. Superior anticancer activity is demonstrated by total extract of *Curcuma longa* L. as opposed to individual curcuminoids separated by centrifugal partition chromatography. *PHYTOTHERAPY RESEARCH*, 2018, 32.5: 933-942. ISSN 0951-418X

Kukuła-Koch, Wirginia; Koch, Wojciech; Czernicka, Lidia; Głowniak, Kazimierz; Asakawa, Yoshinori; Umeyama, Akemi; Marzec, Zbigniew; Kuzuhara, Takashi. MAO-A inhibitory potential of terpene constituents from ginger rhizomes—a bio-activity guided fractionation. *MOLECULES*, 2018, 23.6: 1-12. ISSN 1420-3049

Nizioł-Łukaszewska, Zofia; Furman-Toczek, Dominika; Zagórska-Dziok, Martyna. Antioxidant activity and cytotoxicity of Jerusalem artichoke tubers and leaves extract on HaCaT and BJ fibroblast cells. *Lipids in Health and Disease*, 2018, 17.280: 1-12. ISSN 1476-511X

Rybczyńska-Tkaczyk, Kamila; Święciło, Agata; Szychowski, Konrad A.; Kornilowicz-Kowalska, Teresa. Comparative study of eco- and cytotoxicity during biotransformation of anthraquinone dye Alizarin Blue Black B in optimized cultures of microscopic fungi. *Ecotoxicology and Environmental Safety*, 2018, 147: 776-787. ISSN 0147-6513

Szychowski, Konrad A.; Rybczyńska-Tkaczyk, Kamila; Tobiasz, Jakub; Yelnytska-Stawarz, Viktoriya; Pomianek, Tadeusz; Gmiński, Jan. Biological and anticancer properties of *Inonotus obliquus* extracts. *PROCESS BIOCHEMISTRY*, 2018, 73: 180-187. ISSN 1359-5113

Uram, Łukasz; Filipowicz, Aleksandra; Misiolek, Maria; Pieńkowska, Natalia; Markowicz, Joanna; Wałajtys-Rode, Elżbieta; Wołowicz, Stanisław. Biotinylated PAMAM G3 dendrimer conjugated with celecoxib and/or Fmoc-L-Leucine and its cytotoxicity for normal and cancer human cell lines. *European Journal of Pharmaceutical Sciences*, 2018, 124: 1-9. ISSN 0928-0987

Back, Catherine R.; Sztukowska, Maryta; Till, Marisa; Lamont, Richard J.; Jenkinson, Howard F.; Nobbs, Angela H.; Race, Paul R.. The *Streptococcus gordonii* Adhesin CshA Protein Binds Host Fibronectin via a Catch-Clamp Mechanism. *JOURNAL OF BIOLOGICAL CHEMISTRY*, 2017, 292(5): 1538-1549. ISSN 0021-9258

Leźnicka, Katarzyna; Starkowska, Anna; Tomczak, Maciej; Cięszczyk, Paweł; Białecka, Monika; Ligocka, Maria; Żmijewski, Piotr; Pawlak, Maciej. Temperament as a modulating factor of pain sensitivity in combat sport athletes. *PHYSIOLOGY & BEHAVIOR*, 2017, 180: 131-136. ISSN 0031-9384

Nizioł-Łukaszewska, Zofia; Osika, Paweł; Wasilewski, Tomasz; Bujak, Tomasz. Hydrophilic dogwood extracts as materials reducing the skin irritation potential of body wash cosmetics. *MOLECULES*, 2017, 22(2).320: 1-15. ISSN 1420-3049

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IMPLEMENTATION AND SERVICE CENTER

The Implementation and Service Center was established in 2017 and was created in response to the need to create a unit whose aim is to implement the production of technologies obtained within the framework of research conducted at Medical Faculty and to conduct service activities related thereto.



Services provided by the Implementation and Service Center are mainly targeted at companies dealing in the production, distribution, import / export of cosmetic products and raw materials. They include, among others: preparation of recipes, preparation of comprehensive documentation (including preparation of PIFs, safety reports and product notification on the CPNP portal), conducting obligatory tests and markings specified by Regulation EU 1223/2009 and conducting a wide spectrum of advanced tests on biological activity of products. As part of its activities, the Center also offers consultancy and advisory services in the field of creation of marketing content and the preparation and verification of the content of labels and marketing declarations. The scope of activity of the Implementation and Service Center also includes the implementation of research and development projects in the field of designing and manufacturing cosmetic preparations and raw materials as well as research on the activity of biologically active substances.

In this activity there are used the facilities of Laboratory of Implementation and Service Center.

Contact: tsulenta@wsiz.rzeszow.pl

TEACHING LABORATORIES AND LABS

USED IN THE EDUCATION PROCESS,
IN RESEARCH AND COMMERCIAL ACTIVITIES
IN FIELDS OF STUDY AT MEDICAL FACULTY



Anatomy and Physiology Laboratory

Laboratory equipment allows improving knowledge of the anatomy and physiology of the human body, as well as mechanisms of disease processes and dysfunctions of individual systems. Acquired theoretical knowledge and practical classes enable further study of issues related to the anatomical-physiological aspects of the functioning of the human body. The laboratory is equipped with anatomical models, large-format colorful anatomical charts presenting diagrams of individual parts of the human body, a set of audiovisual and multimedia teaching materials as well as computer programs in the field of human anatomy and physiology. The laboratory will be used for review classes during the implementation of the subjects: anatomy, physiology, pathology.

Contact: nmikulec@wsiz.rzeszow.pl

General Biology Laboratory

The laboratory is adapted to conduct practical-laboratory classes in the area of biology with genetics and microbiology. The laboratory equipment allows microscopic observation of microorganisms (bacteria and fungi) as well as tissue preparations.

Contact: zniziol@wsiz.rzeszow.pl

Cosmetology Laboratory

The laboratory is equipped with the necessary equipment and devices as well as professional cosmetic preparations enabling the performance of treatments in the field of care and therapeutic cosmetology. These include: cosmetic combines equipped with ultrasound, cavitation peeling, devices used for diamond microdermabrasion treatment, needle-free mesotherapy, equipment equipped with RF waves, dermomassage, krolipolysis, etc.

Contact: swierzbinska@wsiz.rzeszow.pl

Make-up and Stylization Laboratory

The laboratory is equipped with professionally arranged stands, equipped with colored cosmetics and accessories which enable color analysis and various types of make-up and stylization.

Contact: swierzbinska@wsiz.rzeszow.pl

Biochemical and Kinesitherapy Laboratory

The laboratory equipment enables the student to be prepared for the use of basic rehabilitation techniques and performing elementary physiotherapy procedures. The laboratory equipment enables conducting simulated classes and acquiring practical knowledge in the field of motor rehabilitation and physiotherapy.

Contact: pjazwa@wsiz.rzeszow.pl



Massage Laboratory

Laboratory equipment allows expanding knowledge of the theoretical foundations of kinesitherapy, therapeutic massage, manual therapy and the practical use of skills gained in working with the patient (individual and group). The laboratory is equipped with the equipment necessary to implement the program and achieve the intended learning outcomes.

Contact: midzikowski@wsiz.rzeszow.pl

Lab of Nursing Skills

The Nursing Skills Lab has a structure and equipment adapted to the needs of conducting teaching in the field of Nursing. The lab is equipped with equipment that allows simultaneous practice at a minimum of 3 stands, providing the opportunity to train the skills of nursing both adults and children, in hospital and out-of-hospital conditions. The lab is equipped with a water installation and has access to a bathroom adapted for the needs of the disabled, equipped with, among others, the door allowing wheelchair access, metal handles to support the disabled, wide shower entry, a chair mounted on the wall under the shower and non-slip mats. The lab is also equipped with small medical equipment, surgical tools, dressing materials and bed linen in an amount ensuring the possibility of achieving learning outcomes in two groups at the same time.

Contact: kdziki@wsiz.rzeszow.pl

Medical Rescue Laboratory

In the Medical Rescue Laboratory, students can acquire practical skills in providing first aid, qualified first aid and medical emergency services. The laboratory is equipped with equipment necessary for demonstration and practical exercises in the field of life-saving and health care for people in emergency situations.

Contact: lcislo@wsiz.rzeszow.pl



Lab of Gastronomy Technology

The lab is intended for theoretical and practical classes for students of Dietetics. The lab is equipped with independent stands and equipment necessary to prepare dishes and beverages. The consumer service room has modern waiter and bartending equipment, which allows students to shape practical skills.

Contact: okolodziej@wsiz.rzeszow.pl

Cell and Tissue Culture Laboratory ✨

It has the status of a BSL2 laboratory according to the criteria of the European Union and WHO – ensuring sterile working conditions protecting both the employee and biological material. Cell cultures are currently one of the most important techniques commonly used in biomedical research. The Cell and Tissue Culture Laboratory gives the opportunity to conduct a wide spectrum of research on processes occurring both in normal cells and tissues as well as in cells in pathological conditions.

Contact: kagawel@wsiz.rzeszow.pl

Immunology and Biochemistry Laboratory ✨

The Immunology and Biochemistry Laboratory conducts biochemical and immuno-enzymatic analyses of samples obtained as a result of experiments carried out on cell lines or samples from patients.

Contact: kagawel@wsiz.rzeszow.pl

Laboratory of Biochemistry Toxicology and Clinical Genetics ✨

This laboratory is designed to perform a wide spectrum of biochemical analyses of biological material collected from patients (blood, serum, urine), plant extracts, food samples and samples obtained in experiments using cell cultures.

Contact: bskora@wsiz.rzeszow.pl

Molecular Biology Laboratory ✨

The Molecular Biology Laboratory is equipped with modern equipment that allows conducting comprehensive research at the molecular level by means of which the mechanisms responsible for the occurrence and course of selected civilization diseases can be characterized.

Contact: bskora@wsiz.rzeszow.pl

Cosmetic Chemistry Laboratory

Laboratory of Implementation and Service Center ✨

The laboratory is equipped with equipment and apparatus that enable the synthesis of chemical compounds, obtaining biologically active substances from plant raw materials, as well as the identification and determination of selected substances. In addition, the laboratory apparatus facilities enable production of innovative cosmetics, determination of the possibilities of applying the obtained substances and raw materials in cosmetic products and a comprehensive analysis of the quality of obtained products.

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