

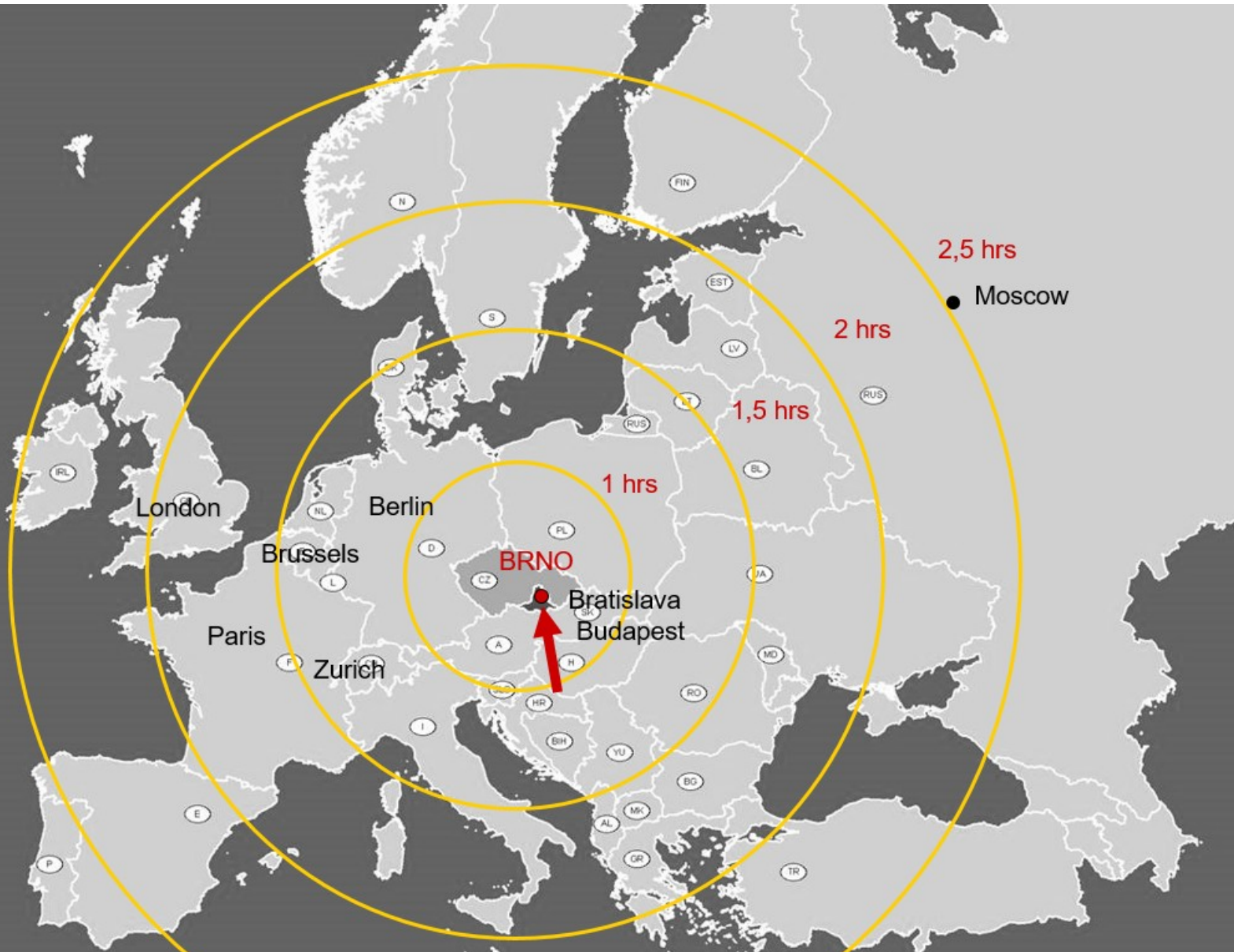


# **Masaryk University**

## **Faculty of Sports Studies**



# Strategic location in Central Europe



# Brno: popular student city



MUNI  
SPORT

# Masaryk University



# Masaryk University

- 2<sup>nd</sup> largest university in the Czech Republic
- 100 years of experience
- 9 faculties
- 32'000+ students
- Top level research
- Strong international community



## MU Faculties

9 faculties with more than 200 departments, institutes and clinics:

- Economics and Administration
- Law
- Medicine
- Science
- Arts
- Education
- Informatics
- Social Studies
- Sports Studies



## Wide study opportunities

- Full degree programs in Czech and English
- Various Exchange and study-abroad programs
- Summer Schools





## Faculty of Sports Studies

- Founded in 2002
- 1200+ students
- expanding dynamically and promoting attributes of healthy lifestyle
- Bachelor's, Master's and PhD study programmes
- Research in the field of biomechanics, physiology, sports medicine, sociology of sport etc.



## Departments

- Department of **Athletics, Swimming and Outdoor Sports**
- Department of **Gymnastics and Combatives**
- Department of **Kinesiology**
- Department of **Sport Pedagogy**
- Department of **Social Sciences and Sport Management**
- Department of **Health Promotion**
- Department of **Sports Games**
- **University Sports Centre**



## Study programs

### Bachelor's

- **Personal and Condition Trainer**
- **Physiotherapy**
- **Physical Education and Sport**
  - Sports Management
  - Regeneration and Nutrition in Sport
  - Special Education of Security Bodies
  - Collective Games Referee
  - Sports Coaching

### Master's

- **Teacher Training in Physical Education for Primary and Secondary Schools**
- **Condition Training and Applied Kinesiology**
- **Applied Sport Education of Security Bodies**
- **Sports Management**

### PhD

- **Kinanthropology (ENG)**

# MUNI SPORT

## Sports facilities



## Regular events

- International **Summer School of Combatives**
- International **Summer School of Sport and Exercise Sciences**
- International **Summer School of Team Psychology in Practice**
- International conference **Sport and Quality of Life**



## **Long-life learning program Football referee**

## Laboratories



## The core areas of faculty research

- ***Dynamic and Kinematic Aspects of Movement***
- ***Biomedical Aspects of Movement***
- ***Social Aspects of Physical Education and Sport***



## Dynamic and Kinematic Aspects of Movement

- **Kinematic analysis of motion**
  - 3D kinematic analysis of human motion
  - Kinematic analysis of sport movement technique
- **Dynamic analysis of motion**
  - Plantar pressure distribution diagnosis
  - Development of insoles
  - Isokinetic dynamometrics
- **Prevention of injuries – falling techniques**
- **Analysis and application of personal self-defence techniques**
- **Research and Diagnostics of movement abilities**
- **Qualitative and quantitative physical activity indicators of selected population segments**
- **Movement skills development and population fitness**
  - Intervention programs effectiveness (stimulation of strength, speed, endurance, flexibility, coordination skills)
  - The effectiveness of different types of sports training periodization
  - Economy of endurance running (influence of step technique and the ground)
  - Intervention programs influence on movement economy
  - Intervention programs influence on selected indicators of population fitness

## Biomedical Aspects of Movement

### ➤ Nutrition issues

- Metabolic syndrome research
- Population nutritional characteristics research
- Children population nutrition
- Food nitrates and muscular performance
- Sports nutrition

### ➤ Exercise and Health

- Physical activity and health status
- The effect of physical activity on the course of selected oncological diseases treatment
- Sports Physiotherapy
- Overtraining of children doing sports
- Research of human posture diagnostic optimization methods
- Research of body reactions to extreme physical and mental stress
- Back and peripheral hand circulation muscles dysfunction while working on PC
- Workplace ergonomics and its modification to reduce sick leave days
- Physical activity risks and methods of their identification
- Physical activity and obesity (total, segmented)
- Sarcopenia and physical activity
- Different types of physical activity impact on changes in microRNA profile

### ➤ Anthropometric and somatometrical characteristics of different population groups

## Social Aspects of Physical Education and Sport

- **Physical activity risks and methods of their identification**
- **Managerial-economic aspects**
  - Sport management research center
  - Managerial concepts of quality and performance and their integration into sports organizations
  - Business in sport
  - Sport organizations professionalization
- **Pedagogical aspects**
  - Application of pedagogical knowledge into an environment of physical education and sport
  - Research of education, gradation and professionalism of sports teachers
  - Education towards safe behavior
- **Psychological aspects**
  - The issue of senior age - experience of an active aging (old age) in good physical condition, intergenerational connection
  - Physical activity for people with specific needs (with regard to age and environment – leisure, school)
- **Sociological aspects**
  - Pathological phenomena in sport, causes and prevention
  - Movement from the sociological point of view
  - The relationship of sociodemographic characteristics and physical activity
  - Active forms of transport in the context of the Czech sedentary society

## Research Methods

### BIOMOTOR LABORATORY

- 3D kinematic analysis: SIMI motion
- Dynamometric platform and walkway: Bertec, Provec, FitroForce
- Stabilometric platform: FitroSway
- Analysis of pressure distribution: Emed, Pedar
- Telemetry systems including EMG: Mye, Vernier
- Accelerometer sensors: ActiGraph, Garmin

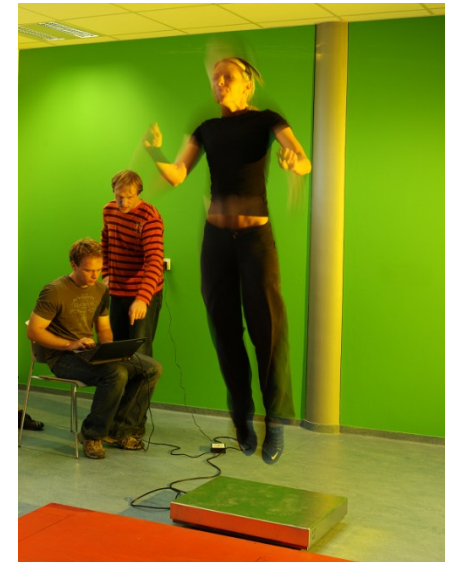


### HEALTH SUPPORT LABORATORY

- Bioelectrical impedance: In Body 230
- Indirect calorimetry: Cortex Metylyzer 3B
- Software NutriPro

### LABORATORY OF SPORTS MEDICINE

- Bicycle ergometer: KETTLER Ergorace, ERGOLINE Ergoselect 200, LODE Excalibur,
- Treadmills: LODE Katana, SAPILO Warulu,
- Analyzers of respiratory gases: CORTEX Metalyzer 3B, OXYCON Mobile,
- Spirometry: SPIROBANK, MICRO Plus
- Analyzers of heart rate variability: VarCor, TF4 DiANS PF8/4,
- Thermographic cameras: FLUKE TiR, FLIR, SC260
- Jump ergometer: FITTRONIC,
- Anthropometric instrumentarium



# MUNI SPORT

## Activities and projects

- Biomechanical shoes and insoles (cooperation with company Boty Hanák)
- Interventional exercises for patient with leukemia – PA influence on patients with oncological problems



## **Activities and projects**

### **FINISHED PROJECTS:**

- Nutrition and efficiency of muscle power
- Kinematical analysis of gait in pregnancy
- Analysis of game aspect in tennis
- Load intensity during game in elite basketball female players
- Plyometric intervention and efficiency of running and cycling
- Testing process in elite volleyball female teams
- Comparison of Czech and international governmental elite sport support
- Identity of Police organizations
- PA of school kids – accelerometric measurement