

FACULTY OF MECHANICAL ENGINEERING TUL

**IMPLEMENTATION PLAN  
STRATEGIC PLAN  
EDUCATIONAL AND CREATIVE ACTIVITIES  
FME TUL  
  
FOR 2024**

The Scientific Council of the Faculty of Mechanical Engineering of TUL discussed on November 29, 2023.  
Approved by the Academic Senate of the Faculty of Mechanical Engineering of TUL on January 17, 2024.

## INTRODUCTION

The plan for the implementation of the Strategic Plan of Faculty of Mechanical Engineering TUL for 2024 is based on the Strategic Plan of Educational and Creative Activities of FME TUL for the period 2021-2025 with a view to 2030.

It presents a set of concrete actions and steps for 2024 that should both address the faculty's weaknesses and further fulfill the 2025 state of the art, extending into the period 2025–2030.

The FME TUL 2024 Implementation Plan follows the evaluated FME TUL 2023 Implementation Plan and the FME TUL 2021–2023 Implementations Plan. It is based on the TUL Strategic Implementation Plan for 2024 and on the TUL Strategic Management Support Programme for 2022–2025.

In 2024, the standard activities in the individual areas of activities will continue to be implemented and the established and proven activities and measures evaluated in the annual reports on the activities of the FME TUL will be continued.

In the defined areas, the activities defined in the FME TUL Implementation Plans for 2021, 2022, 2023 will be followed up or continued.

The following measures and activities will be targeted in the sub-areas.

## STRATEGIC AREAS OF THE IMPLEMENTATION PLAN OF THE SP FME TUL FOR THE YEAR 2024

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## A / EDUCATION AND STUDY

- Translate the amendment to the Higher Education Act into all related areas.
- Continue to develop the curriculum for the professional bachelor's degree programme in systems engineering and logistics. Under preparation since 2022 with EF TUL, submitted to the National Accreditation Office of the Czech Republic in 2023.
- Evaluate the implementation of the BSP Mechanical Engineering and discuss possible changes – the possibility of profiling students by modifying the BSP Mechanical Engineering within the scope of the NAU rules.
- Discuss the concept of a new BSP focused on waste and recycling.
- Continue the discussion on the content of the envisaged follow-up Master's degree programme in Energy Engineering.
- Evaluate the results and discuss the experience with the implementation of study programmes by the Council of Guarantors of SP FME TUL.
- Monitor the expected change in the labour market in relation to the expected change in the labour market in relation to the introduction of AI. Discuss in relation to the graduate profile.
- Discuss and introduce, as part of curriculum innovation, based on student feedback, support workshops or seminars, or an elective course focused on entrepreneurship education and to facilitate the transition to practice
- To continue to develop teaching methods and forms in relation to didactic transformations of the content of teaching units, to support the teaching process with modern didactic means and technologies that correspond to the development of pedagogical sciences, technical possibilities of the faculty and the overall concept of teaching units.
- To continue the set activities to strengthen partnerships with industrial partners, secondary schools in the Liberec Region and the wider region, including universities in the Oberlausitz region.
- Conduct meetings with guidance counsellors and other representatives of secondary schools to promote interest in studying technically oriented study programmes TUL. Update partnership with secondary schools in the form of faculty status.
- Increase the competence of academic staff by completing courses in university pedagogy prepared in 2023 by the TUL management in cooperation with the TUL Continuing Education Centre.
- Continue the set system of teaching evaluation, evaluate and publish results, respond to evaluation results and set measures. Produce a summary report.
- Continue to analyse the causes of dropout. Promote student creativity, creative activities of students.
- To prepare a study of the source data of students entering the FME TUL from secondary schools, especially in the Liberec region, over the last five to ten years.
- To support departments in the development of learning support with an emphasis on supporting blended and distance learning and blended learning. Target the preparation of on-line teaching materials for subjects taught in English.

- Develop and innovate didactic and other teaching materials for English language courses.
- Strengthen activities to increase the number of self-payers. Map source countries and content of study programmes in selected engineering faculties abroad.
- Promote and develop the competencies of academic staff for education in English degree programmes. To support TUL staff trips on language courses under the Erasmus+ programme.
- Support and participate in TUL activities aimed at strengthening the language competences of foreign students and their involvement in the academic community.
- Continue to promote English study programmes at foreign universities on-line, possibly also in full-time form, to target an increase in the number of foreign students.
- Continue to expand the number of FME TUL ambassadors at foreign universities in order to strengthen the level of promotion of cooperation opportunities. Implementation of foreign missions to strengthen international cooperation in education and research and the promotion of English study programmes.
- Prepare and organize webinars with partner universities abroad with the aim of promoting studies at FME TUL, including short-term exchange stays. With emphasis on the development of cooperation with Europe.
- Organize lectures of foreign experts at the FME TUL. To organize webinars of foreign experts for students in the framework of teaching. To support foreign ambassadors from the ranks of the FME TUL graduates.
- Regularly acquaint students and staff with the current offers of mobility programmes (ERASMUS+, CEEPUS, IAESTE, AKTION, etc.). Participate in Erasmus+ KA171 university-wide calls for selected non-EU countries.
- Continue cooperation with RWTH Aachen (Germany), especially in the framework of student exchanges and joint research activities in the field of nanofibrous materials and technologies for the production of nanofibrous structures and to establish new cooperation in other areas.
- Continue the University of Waterloo – Waterloo Institute collaboration for Nanotechnology (Canada) in the field of nanofibrous materials for technical and medical applications and initiate the development of cooperation in other areas, particularly in the field of robotics and energy.
- Continue cooperation in education and research with Conestoga College (Canada), Aston University (UK), King Mongkut's University of Technology North Bangkok (KMUTNB), UTM (Malaysia).
- Realize the visit of Dr. Pinyo Puangmali, Head of Faculty of Engineering – Chiang Mai University to FME TUL.
- Develop cooperation with Chiang Mai University, to realize the journey of academics FME TUL working in the field of robotics at the FME TUL.
- Intention to submit project KA171 (Erasmus+ credit mobility) to continue cooperation with partners in Canada and Malaysia, possibly in Thailand.
- Continue the renewal of Erasmus+ inter-institutional agreements for student and staff mobility, concluding new partnership agreements.
- Build on the implementation of the Blended Intensive Program (BIP) in 2023, to consider developing another BIP.

- Develop activities and prepare for the implementation of new networks within the CEEPUS programme.

## **B / SCIENCE, RESEARCH, DEVELOPMENT, INNOVATION**

- Continue the activities defined in the Implementation Plans of the FME TUL 2022–2023.
- Continue the implementation of the FME TUL VVI FS +2030 Strategy, to evaluate research directions and research programmes, to set up a plan for further development of programmes.
- Focus on supporting intersectoral and interdisciplinary topics with potential for application within faculty, interfaculty and university projects and cutting-edge research projects (lightweight construction, sustainable mobility, hydrogen technologies, materials with specific properties, etc.).
- Prepare the basis for the 2019–2023 faculty evaluation under the Methodology 2017+.
- Strengthen the international dimension of scientific research.
- Strengthen the qualitative parameters of doctoral studies with an emphasis on the international dimension of studies.
- Present the results of scientific research cooperation and cooperation offers with an emphasis on the international dimension.
- Develop a system for collecting FME TUL results with the potential for application in the M1 module established in 2023. Work with the results to describe and supporting documentation prepared in the best possible quality.
- Summary the implementation of doctoral study programmes for the 2018–2023.
- Respond to the changes reflected in to doctoral study programmes, if the amendment to the Higher Education Act will approved
- Within the framework of the TUL methodology for evaluating supervisors to monitor the outcomes achieved in the cooperation between the supervisor and the doctoral student.
- Strive for high quality publication outputs of doctoral students, to complete foreign internships at leading institutions in the field of the dissertation.
- Introduce the obligation of doctoral students to present the course and results of foreign internships to the FME TUL academic community.
- Discuss motivational measures to support the production of dissertations in English for doctoral study programmes conducted in Czech and thus motivate students to realise post-doc positions.
- Continue close cooperation between the Vice Dean and the Doctorap Study programme Disciplinary FME TUL councils. To request the departmental boards to become thoroughly familiar with the topic of the PhD student's dissertation and to propose leading experts in the field to the State Doctoral Examination and Dissertation Defense Committees.
- Participate in the completion of the final version of the TUL Methodology for the Evaluation of Trainers. Conduct testing of the methodology on a wider sample of trainers.

## **C / SOCIAL RESPONSIBILITY**

- Develop new forms of cooperation in response to societal challenges and to respond to the expected needs of the industrial sector linked to societal themes in the field of sustainable energy and low or zero emission transport related to sustainable mobility.
- FME TUL has an ambition to participate in research in the field of hydrogen technologies.
- Cooperate with regional agencies, associations and professional chambers.
- Continue to offer activities for all generations in the field of knowledge, science and technology.
- Develop forms of promotion and presentation of the faculty towards the public in the field of the results of creative activities.
- Continue and develop the concept of presentation and promotion of the FME TUL through available networks.
- Modifying the structure and cubes of the website navigation.
- Continue the tradition of the past years and organize the T-Forum fair.

## **D / ACADEMIA AND FACULTY COMMUNITY**

- Continue to realise the so-called Diamond Graduations.
- Organize a discussion meeting of the heads of the departments with the management of the FME TUL
- Strengthen the morale and work ethics of academics. Implement a development workshop on "Internal Communication and Collaboration" for senior staff.
- Continue the implementation of the Career Regulations, analysing the results of staff appraisals and taking any necessary measures in the direction of towards quality improvement in key activities of academic staff.
- Continue to implement the Career Regulations and Academic Staff Standards.
- Continue the annual staff appraisal and the resulting derivation of possible measures towards human resources management.

## **E / MANAGEMENT OF ACTIVITIES**

- Continue activities established and initiated in 2022 and 2023.
- Continue distance learning activities for academics in the areas of presentation, communication, digital skills, etc. through the seduo.cz course offerings.
- Develop the interconnectivity of data management systems. To work towards the use of data for analysis of faculty activity evaluation.
- Finalize and pilot test an application for departmental performance evaluation, faculty budget allocation and Institutional support for the long-term conceptual development of the research organisation.
- Support the unification of procedures and computerization of the study agenda within TUL, especially the interconnection of the study agenda and the file service

in accordance with the Higher Education Act and the TUL Statute, gradual introduction of the electronic student file.

- Support a short-term courses oriented towards professional and personal development and the development of intercultural competences.
- Implement the set mobility management system at the FME TUL. To strengt the implementation of the mobility.tul.cz agenda at the departments.

## **F / INFRASTRUCTURE**

- Continuously upgrade the equipment of teaching laboratories.
- Continuously renew the infrastructure for the development of research programmes.
- Refresh the IT infrastructure of the FME TUL.
- Innovate and develop infrastructure according to needs and defined objectives. Take advantage of ERDF calls within the framework of OP JAK.
- Prepare documents for the tender for the procurement of infrastructure equipment for hydrogen technologies.
- Building on the university's cybersecurity measures, transfer the measures to the faculty and departmental level.
- Increase employee cybersecurity literacy.
- Implement the second stage of securing the website of the FME TUL.

## **FINANCIAL RESOURCES**

- Contribution from the state budget of the Czech Republic
- Subsidies from the state budget of the Czech Republic
- Investment Programme for the Development of Infrastructure of Higher Education Institutions of the Ministry of Education, Sports and Youth of the Czech Republic
- Development and subsidy programmes of the Ministry of Education, Sports and Youth of the Czech Republic – Programme to support the strategic management of the Technical University of Liberec for 2023, National Renewal Plan for public higher education institutions, Centralised Development Programme for public higher education institutions
- Grant programmes of regions and Prague
- Programmes of the Academy of Sciences of the Czech Republic, Grant Agency of the Czech Republic, Technology agency and ministries of the Czech Republic
- OP JAK, OP TAK, other EU operational programmes
- Horizon Europe programme
- International cooperation programmes in research and development
- Programmes to support student and academic mobility
- Own resources FME TUL
- Contract research
- Additional activities,
- Donations