**"POLITEHNICA" UNIVERSITY OF TIMISOARA, ROMANIA**
**COMPETENCES OF UPT GRADUATE IN:**

**Fundamental domain: Engineering Sciences**

**Master's degree study programme:**

**„ERGOENGINEERING IN MECHATRONICS"**

**(Bachelor degree: Mechatronics and robotics)**

| Crt. No. | Competences |
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| 1 | **Developing complex projects in the field of occupational ergonomic systems**<br><br>**Description:** Identification of complex structures and solutions for special requirements, identifying the appropriate models and components and knowledge of methods for analysis of ergonomic systems dynamics, knowledge of methods for assessing their performance.<br>Application of advanced mathematical methods in integrating hardware components in ergonomic systems. Mathematical Methods for assessment of overall performance in applications.<br>Creative use of CAD methodology in shape integration for ergonomic systems.<br>Implement creative and dynamic analysis methods for achieving specified levels of performance in ergonomic systems.<br>Adapting research methodology for a specific project application. |
| 2 | **Ergonomic analysis of the performance of ergonomic systems in all areas**<br><br>**Description:** Using computer-assisted methods for analyzing the quality systems.<br>Understanding the relationship between hardware and software subsystems integration.<br>Set design and analysis software for assisted ergonomic systems.<br>New structure optimization creation of the subsystem and system level.<br>Context adapt application of the design stages within a specific development methodology.<br>Criteria definition for ergonomic quality evaluation of a system/techincal departments(all domains: transport, medical engineering, mechanical engineering, technology processes, mechatronics processes, etc.)/medical/constructional/architectural/environmental, ocupational psychology, administration, management, etc. in ergonomic view in terms of its performances and optimal choice methods. |
| 3 | **Testing ergonomic systems development and documentation.**<br><br>**Description:** Adapting methods of ergonomical systems analysis and testing.<br>Understanding the relationship between integrated subsystems performances and the ergonomical problems at the subsystem level incidence.<br>Adaptive application of the testing stages involved into a specific development methodology.<br>Criteria definition for each testing step evaluation.<br>Functional structure documentation developing.<br>Testing documents development and structure testing documentation development. |
| 4 | **Application and development of occupational methodologies with ergonomic applicability in different fields.**<br>**Description:** Knowledge of occupational methodologies with ergonomic |

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| | applicability.<br>Understanding the relationship between design and simulation/testing of the ergonomical systems.<br>Requieremnts specification for specific ergonomic design application classes: technical departments(all domains: transport, medical engineering, mechanical engineering, technology processes, mechatronics processes, etc.)/medical/constructional/architectural/environmental, ocupational psychology, administration, management, etc. in ergonomic vision.<br>System stage solution validation.Optimal design of specific subsystems.Measuring the effort of ergonomic principles application to the system functioning and performces.<br>Structure design and approval of documentation to achieve ergonomic system. |