Eötvös Loránd University
Faculty of Informatics
Savaria Institute of Technology
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MSc FINAL EXAM QUESTIONS

Machine design

M1. What are the main types of tolerance stackup chains and the main targets of tolerance analysis? Describe the method of full interchangeability.

M2. Which methods can be used to ensure the ability to assemble components? Describe the method of partial interchangeability.

M3. What is the role of optimisation in the design process? Describe terms related to optimisation and main methods of topology optimisation.

M4. What is reverse engineering, what are the possible use cases? What steps are involved? Describe technological solutions involved.

M5. Describe the main types of pressure vessels, and their main parts. Describe the essential elements of the Pressure Equipment Directive (2014/67/EU) and what design concepts, investigations it requires.

M6. Describe the main load cases and load types of pressure vessels. What factors need to be considered when defining wall thickness?

M7. Describe the main types of welded structures and their load cases. Which factors need to be considered during their design respecrtively? What are general considerations to be taken during definition of safety factors?

M8. Describe the beam joining and reinforcement methods in steel structures. Describe which techniques can be used to reduce deformations and residual stresses after welding.