



FREDERICK UNIVERSITY

DEPARTMENT OF MECHANICAL ENGINEERING

«MSc in MANUFACTURING AND WELDING ENGINEERING DESIGN»

Specializations:

- a) Manufacturing Engineering Design
- b) Welding Engineering Design

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MSc Thesis titles

1. Design and construction of advanced machine elements and devices
2. Characterization of thin hard coatings performance
3. New Materials, Coatings and surface engineering
4. Applications of thin hard coatings on machining or forming tools
5. Application of PVD, CVD and thermal spray coatings on machine parts or elements
6. Plastic dies and moulds
7. Design of high Performance forming dies and moulds
8. Industrial machining or forming applications and special tools
9. Manufacturing processes with material removal
10. CNC machine tools and CAD/CAM systems
11. Manufacturing of complex geometries
12. Computer-Aided Process Planning in the 5-Axis CNC Machine Environment
13. Design and manufacturing, features, process selection, process parameters, work piece material, machine type, tool type and path, quality checks
14. Welding engineering simulation and quality testing
15. Modeling, residual stresses and distortion due to welding
16. Design of various parts for oil and gas industry
17. Welding parameters and their effect on strength
18. Welds in high strength steels
19. FEM supported determination of the biomechanical response of the human spine
20. Reconstruction of complex products by Computer Tomographies and Rapid Prototyping
21. Design applications in human systems and special experimental procedures

22. Quality in product design and development
23. Machining or forming quality and cost reduction
24. Quality improvement for manufacturing systems design and control
25. Advanced models in engineering design