VSB TECHNICAL | FACULTY |||| UNIVERSITY OF MECHANICAL OF OSTRAVA ENGINEERING

Questions for the state final exam

Master study programme N0715A270022 – Engineering Technology,

academic year 2024/2025

ASSEMBLY, TOOLS AND FIXTURES, PROCESS CONTROL

AND DESIGN

- 1. Design of form turning tools and their cutting edge geometry.
- 2. Design of form milling cutters with relieved teeth and their cutting edge geometry.
- 3. Involute gearing definition and tools for its machining, design of disk-type and end-type gear milling cutters and their cutting edge geometry.
- 4. Design of cutting tools for gear generating (rack-shaped cutters, hobs, pinion-shaped cutters) and their cutting edge geometry.
- 5. Measuring machines (length meters, microscopes, projectors, collimation) and coordinate measuring machines (mobile and stacionare)
- 6. Deviations of shape and positions (definitions, control methods, gauges).
- 7. Basic tools and quality management systems.
- 8. Methods used in quality planning and for process monitoring and improvement (FMEA, 8D report, APQP, PPAP, SPC-diagrams...).
- 9. The stages of technological design, the flow chart of systematic design.
- 10. The issue of the economical use of production system elements capacity calculations.
- 11. The procedures and methods of the placement of objects, machines, and workplaces.
- 12. Fire protection principles in design, workplace lighting, noise.
- 13. The definition of the concept of production and production management, production management goals, production management hierarchy, the position of production in the company management system.
- 14. Fixtures definition, classification, application, jig and fixture construction, permanent jigs and fixtures, modular fixtures and general-purpose workholders.

- 15. Basic principles of locating locational accuracy, locators and supports.
- 16. Clamping devices strap-, screw-, edge-, C-, swing C -, shark-, cam- and toggle clamps.
- 17. Jig construction template-, plate-, table- and indexing jigs, drill bushings.
- 18. Assembly Elements and Systems.
- 19. Assembly Methods.
- 20. Assembly Organization, Lines and Rationalization.