MDAD 1210: Tool Design

A. COURSE DESCRIPTION

Credits: 2
Lecture Hours/Week: 2
Lab Hours/Week: *.*
OJT Hours/Week: *.*
Prerequisites: None
Corequisites: None
MnTC Goals: None

The student will develop an understanding of tool design as it applies to industry. The student will gain an understanding of jigs and fixtures, gages, and injection mold design. Tool design materials, safety, economy, and functionality will be paramount in this course. (Prerequisites: MDAD1202, MDAD1204, MDAD1208, MDAD1214) (2 credits: 2 lecture/0 lab)

B. COURSE EFFECTIVE DATES: 04/27/1998 - Present

C. OUTLINE OF MAJOR CONTENT AREAS
D. LEARNING OUTCOMES (General)
   1. Create template jigs
   2. Create inspection gaging
   3. Analyze various jig and fixture types
   4. Perform predesign analysis
   5. Consider humans in design
   6. Analyze tool drawings
   7. Analyze tool materials
   8. Apply geometric tolerancing
   9. Identify tool design objectives
  10. Analyze design economics
  11. Identify product routing
  12. Identify product scheduling
  13. Identify product inspection
  14. Identify types of fixtures
  15. Define three point locator theory
  16. Define foolproofing
  17. Analyze basic rules of clamping
  18. Create an injection mold design
  19. Identify mold bases
  20. Analyze mold components
  21. Analyze runners and gates
  22. Analyze cores and cavities
  23. Analyze part ejection
  24. Analyze injection molded parts

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   None

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted