

Minnesota State College Southeast

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 locater 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