

Minnesota State College Southeast

MDAD 1212: Tool Design Lab

A. COURSE DESCRIPTION

Credits: 5

Lecture Hours/Week: *.*

Lab Hours/Week: 10

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

The student will apply the knowledge gained in Tool Design lecture. The application will consist of designing three or four jigs and/or fixtures and an injection mold. (Prerequisites: MDAD1202, MDAD1204, MDAD1208, MDAD1214) (5 credits: 0 lecture/5 lab)

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

C. OUTLINE OF MAJOR CONTENT AREAS

D. LEARNING OUTCOMES (General)

1. Create template jigs drawings
2. Create inspection gaging drawings
3. Analyze various jig and fixture types - create one type of drawing
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 drawing
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