COURSE INFORMATION FORM

DISCIPLINE  
COURSE TITLE  
CR.HR  3  LECT HR.  2  LAB HR.  2  CLIN/INTERN HR.  0  CLOCK HR.  0

CATALOG DESCRIPTION
This course is designed for the experienced Mastercam user wanting to explore 3-Dimensional frame creation and surface modeling. The course focus will be on 3-D surface creation, surface machining, construction planes, drawing organization and four and five axis machine procedures.

PREREQUISITES
CIMM 225

EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)
Upon completion of this course, the student will be able to:
1. Organize CAD drawings for surface machining.
2. Interpret and use construction planes for 3-D construction.
3. Interpret and use graphic views for 3-D construction.
4. Construct 3-D wire frame construction.
5. Understand the use of Z levels in 3-D construction.
6. Demonstrate the use of tool planes.
7. Construct surface blends, fillets and variable fillets.
8. Construct and understand the uses of different surface types.
9. Demonstrate good practice and procedures in different surface types and applications.
10. Construct a project using the common surface types.
11. Use the post processor function.
12. Produce a CNC project using 3-D surfaces and machining techniques.
GENERAL EDUCATION OUTCOMES (ESO)
Specify which general education outcomes, if any, are substantially addressed by the course. Numbers in parentheses identify the Expected Student Outcomes linked to the specific General Education Outcome.

| Outcomes | ESO |

PROGRAM-LEVEL OUTCOMES

CAREER AND TECHNICAL EDUCATION PROGRAM OUTCOMES
Specify which Career and Technical program outcomes, if any, are substantially addressed by the course by completing the “Career and Technical Education template” to show the relationship between course and program outcomes to assessment measures.

1. Students will demonstrate the ability to apply foundational skills in an industrial setting, safely and to industry guidelines.

2. Students will demonstrate professional oral and written communication skills.

3. The program will graduate individuals who exhibit competence in CNC programming, setup and operation.

CLASS-LEVEL ASSESSMENT MEASURES
Student accomplishment of expected student outcomes may be assessed using the following measures. (Identify which measures are used to assess which outcomes.)

Student Evaluation: (1-12)
Instructor Assessment & Evaluation: (1-12)
Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. Basic 2-D Modeling Review
II. 3-D Wire Construction
III. Planes
   A. Construction Planes
   B. Z-levels in 3-D construction
   C. Tool Planes
IV. Surfaces
   A. Surface Types
   B. Applications
   C. Construction of Common Surface Types
   D. 3-D Surface Machining Techniques
   E. 3-D Surface Machining Toolpaths
V. 4-Axis Machining
VI. 5-Axis Machining
VII. Post Processors
VIII. Program Setup and Execution