

KRCC
MANUFACTURING 37B MILL/CNC
GENERAL INFORMATION AND POLICIES

INSTRUCTOR: MR. GENE EVANS

PHONE: 638-0313

OFFICE: IT 16

OFFICE HOURS: TUESDAY, WEDNESDAY, THURSDAY 1:00 - 2:00 P.M.

DESCRIPTION: MACHINE SHOP MILL - CNC
OPERATION OF MACHINE SHOP EQUIPMENT, NUMERICAL CONTROL PROGRAMMING,
CNC MACHINE OPERATION, MILLING MACHINES, GEAR CUTTING, GRINDING
MACHINES.

EXPECTED OUTCOMES:

1. THE STUDENT WILL BE ABLE TO WRITE BASIC PROGRAMS FOR CNC MILLS.
2. THE STUDENT WILL BE ABLE TO OPERATE THE CNC MILL.
3. THE STUDENT WILL BE ABLE TO SET-UP AND PERFORM MILLING OPERATIONS WITH THE USE OF THE INDEXING HEAD AND ROTARY TABLE.
4. THE STUDENT WILL BE ABLE TO WRITE MILL PROGRAMS USING G0 CAM (COMPUTER AIDED MANUFACTURING).
5. THE STUDENT WILL BE ABLE TO PROPERLY HEAT TREAT MEDIUM AND HIGH CARBON STEELS TO PRESCRIBED SPECIFICATIONS.
6. BY THE END OF THE SEMESTER, THE STUDENT WILL BE ABLE TO SATISFACTORILY PASS THE FIRST YEAR MACHINIST APPRENTICE EXAMINATION PROVIDED BY THE NATIONAL TOOL AND DIE AND PRECISION MACHINING ASSOCIATION.

REQUIRED BACKGROUND: NONE

MINIMUM STUDENT MATERIALS:

1. TEXTBOOK - MACHINING FUNDAMENTALS, JOHN R. WALKER 1998.
2. LABORATORY MANUAL - WORKBOOK FOR MACHINING FUNDAMENTALS, WALKER 1998.
3. SAFETY GLASSES
4. RECOMMENDED STARTING MACHINIST TOOL BOX.

HOW CLASS WILL BE CONDUCTED:

- | | |
|---------------|----------------|
| 1. LECTURE | 4. FIELD TRIPS |
| 2. DISCUSSION | 5. QUIZZES |
| 3. SHOP WORK | |

*Final exam
attendance*

COURSE OUTLINE:

MFG 37B

WEEK	UNIT	AGENDA
1	HANDOUT	SAFETY, SCALES, MICROMETERS, CALIPERS, QUIZ PRECISION MEASUREMENT
2-9	HANDOUTS	NUMERICAL CONTROL, MACHINE OPERATIONS, SET-UP, COMPUTER AIDED PROGRAMMING. QUIZ, CNC OPERATION QUIZ, CNC PROGRAMMING
10-11	12	MILLING MACHINES, KEYSEATS, INDEXING, ROTARY TABLES QUIZ, INDEXING
Last day to drop class without grade.		<u>MARCH 10</u>
10	Westec SHOW MARCH 20-23	LOS ANGELES
13-14	13	GRINDING MACHINES, GRINDING WHEELS, SURFACE GRINDING, TOOL AND CUTTER GRINDING QUIZ, PRECESSION GRINDING
15-16	18-19	METALLURGY, METALS AND USES, HEAT TREATING
17		PREVENTATIVE MAINTENANCE, REVIEW, FINAL EXAM.
Final Examination schedule.		<u>May 17 8:00 A.M.</u>

ASSIGNMENTS:

WORKBOOK FOR MACHINING FUNDAMENTALS, WALKER, 1998

CHAPTER	DATE DUE
REVIEW PRECESSION MEASUREMENT Chapter 4 p23-29	JAN 12
CNC PROGRAM QUIZ	JAN 26
WRITE PROGRAM #1	FEB 2
WRITE PROGRAM #2	FEB 9
WRITE CAM MILL PROGRAM #1	MAR 1
WRITE CAM MILL PROGRAM #2	MAR 8

WESTEC Los Angeles

March 20 - 23

MILL CHAPTER 12	PAGE 81 PART 1, PAGE 87 PART IV	MAR 29
MILL CHAPTER 12	PAGE 88 PART V, PAGE 89 PART VI	APR 5
GRINDING CHAPTER 13	PAGE 95 PART 1	APR12
GRINDING CHAPTER 13	PAGE 98 PART II	APR 26
METAL CHARACTERISTICS CHAPTER 18	PAGE 121	MAY 3
HEAT TREATMENT OF METALS CHAPTER 19	PAGE 123	MAY 10

GRADING:

12 ASSIGNMENTS QUIZZES EXAMS	600 POINTS
ONE FINAL EXAM. 200 POINTS	200 POINTS
REQUIRED PROJECT WORK - SHOP WORK	
SIX REQUIRED MACHINING OPERATIONS	600 POINTS
WEEKLY SHOP WORK OFF OF TIME CARDS	150 POINTS
END OF SEMESTER PROJECT COMPLETION	350 POINTS
ATTITUDE ABILITY TO WORK WITH OTHERS	300 POINTS
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	2200 POINTS

2200 TO 1980 POINTS = A

1979 TO 1760 POINTS = B

1759 TO 1540 POINTS = C

1549 TO 1320 POINTS = D

ANY ASSIGNMENT TURNED IN ONE WEEK LATE WILL RECEIVE 50% CREDIT. ANY ASSIGNMENT MORE THAN ONE WEEK LATE WILL RECEIVE NO CREDIT. EXTRA POINTS MAY BE EARNED BY ATTENDING FIELD TRIPS, RESEARCH PAPERS, OR SHOP ASSIGNMENTS OUTSIDE OF SCHEDULED CLASS TIME.

DATE: _____ NAME _____

MFG 37B MILL/CNC

LIST WORK DONE IN EACH REQUIRED AREA:

1. CNC PROGRAMMING : (100 POINTS) _____
2. CNC MILL OPERATION: (100 POINTS) _____
3. CAM PROGRAMMING (200 POINTS) _____
4. MILL GEAR CUTTING: (100 POINTS) _____
5. HEAT TREATING: (50 POINTS) _____
6. SURFACE GRINDING: (50 POINTS) _____
7. TOOL AND CUTTER SHARPENING: (50 POINTS) _____

LIST PROJECTS COMPLETED THIS SEMESTER: (350 POINTS)

1. _____
2. _____
3. _____
4. _____
5. _____