

**KRCC**  
**MANUFACTURING 370 MILL/CNC**  
**GENERAL INFORMATION AND POLICIES**

**INSTRUCTOR:** MR. DAVID ~~MOONEYHAM~~  
**PHONE:** 638-0313  
**OFFICE:** IT16  
**OFFICE HOURS:** MONDAY 5-6 P.M., WEDNESDAY 5:00 - 6.00 PM

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

**EXPECTED OUTCOMES:**

- THE STUDENT WILL BE ABLE TO WRITE BASIC PROGRAMS FOR CNC MILLS
- THE STUDENT WILL BE ABLE TO OPERATE THE CNC MILL AND TURNING CENTER
- THE STUDENT WILL BE ABLE TO SET-UP AND PERFORM MILLING OPERATIONS WITH THE USE OF THE INDEXING HEAD AND ROTARY TABLE.
- THE STUDENT WILL BE ABLE TO WRITE MILL AND LATHE PROGRAMS USING GO CAM ((COMPUTER AIDED MANUFACTURING).
- THE STUDENT WILL BE ABLE TO PROPERLY HEAT TREAT MEDIUM AND HIGH CARBON STEELS TO PRESCRIBED SPECIFICATIONS.
- 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 PRECESSION MACHINING ASSOCIATION.

**REQUIRED BACKGROUND:** NONE

**MINIMUM STUDENT MATERIALS:**

- TEXTBOOK - MACHINING FUNDAMENTALS, JOHN R. WALKER, 1989. (OPTIONAL)
- LABORATORY MANUAL - WORKBOOK FOR MACHINING FUNDAMENTALS, WALKER 1989.(OPTIONAL)
- THE CNC WORKBOOK, FRANK NANFARA, TONY UCCELLO, DEREK MURPHY, A995
- SAFETY GLASSES
- RECOMMENDED STARTING MACHINIST TOOL BOX

**HOW CLASS WILL BE CONDUCTED:**

- LECTURE
- DISCUSSION
- SHOP WORK
- FIELD TRIPS
- QUIZZES

*Attendance*

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<b>WEEK</b>	<b>UNIT</b>	<b>AGENDA</b>
1	HANDOUTS	SHOP SAFETY
2	HANDOUT	SCALES, MICROMETERS, CALIPERS, QUIZ, PRECISION MEASUREMENT
3-9	HANDOUT	NUMERICAL CONTROL, MACHINE OPERATIONS, PROGRAMMING, MACHINE, SET-UP, MACHINE OPERATIONS COMPUTER AIDED PROGRAMMING QUIZ, CNC OPERATION
10-11	12	MILLING MACHINES, KEYSEATS, INDEXING, ROTARY TABLES, QUIZ, INDEXING
12	WESTEC	LOS ANGELES
13-14	13	GRINDING MACHINES, GRINDING WHEELS, SURFACE GRINDING, TOOL AND CUTTER GRINDING QUIZ, PRECISION GRINDING
15-16	18-19	METALLURGY, METALS AND USES, HEAT REATING
17		PREVENTATIVE MAINTENANCE REVIEW, FINAL EXAM

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<b>ASSIGNMENTS:</b> WORKBOOK FOR MACHINING FUNDAMENTALS, WALKER, 1989 THE CNC WORKBOOK, MURPHY, 1995	
<b>CHAPTER</b>	<b>DATE DUE</b>
SHOP SAFETY REVIEW	JANUARY 19TH
REVIEW PRECISION MEASUREMENT	JANUARY 24TH
CNC WORKBOOK CHAPTER #5	JANUARY 31ST
WRITE PROGRAM #1	FEBRUARY 7TH
WRITE PROGRAM #2	FEBRUARY 14TH
WRITE CAM MILL PROGRAM	FEBRUARY 23RD
WRITE CAM LATHE PROGRAM	FEBRUARY 28TH
<del>LAST DAY TO DROP CLASS WITHOUT ASSIGNED GRADE</del>	<del>MARCH 10TH</del>
MILL CHAPTER 12 PAGE 81 PART I, PAGE 87 PART IV	MARCH 13TH
MILL CHAPTER 12 PAGE 88 PART V, PAGE 89 PART VI	MARCH 20TH
WESTEC	MARCH 20TH - MARCH 23RD
LAST DAY TO DROP CLASS	MARCH 10TH
GRINDING CHAPTER 13 PAGE 95 PART I	APRIL 10TH
GRINDING CHAPTER 13 PAGE 98 PART II	APRIL 24TH
METAL CHARACTERISTICS CHAPTER 18 PAGE 121	MAY 1ST
HEAT TREATMENT OF METALS CHAPTER 19 PAGE 123	MAY 8TH
<b>FINAL EXAM</b>	<b>MONDAY, MAY 15TH 6PM</b>

<b>GRADING:</b>	
12 Assignments Quizzes Exams	600 Points
One Final Exam	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
<b>Total</b>	<b>2200 Points</b>

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.