

El Paso Community College Syllabus Part II Official Course Description

SUBJECT AREA	<u>Machining Technology</u>
COURSE RUBRIC AND NUMBER	<u>INMT 2334</u>
COURSE TITLE	<u>Numerical Control/ Computerized Numerical Control Programming (NC/CNC)</u>
COURSE CREDIT HOURS	<u>3 2 :</u> <u>4</u> Credits Lec Lab

I. Catalog Description

Studies the safety, principles and concepts of numerical control through computer applications, specifically in the area of programming for the control of machine tools in computer integrated manufacturing (CIM). (2:4). Lab fee.

II. Course Objectives

Upon satisfactory completion of this course, the student will be able to:

- A. Develop CNC program “G” codes.
- B. Perform maintenance checks.
- C. Lay out tooling setup.
- D. Indicate tool layout.
- E. Utilize jigs and fixtures.
- F. Load parts program into CNC machine.
- G. Indicate work piece and worktable.
- H. Perform dry run operations.
- I. Execute full run sequence.
- J. Read technical manuals for operations and maintenance.
- K. Organize work area.
- L. Use personal safety attire.
- M. Evaluate part for accuracy.
- N. Calculate feeds and speeds.
- O. Perform machine setups.
- P. Utilize terminology of the trade.
- Q. Recognize x, y, z, u, v coordinate systems.
- R. Fabricate parts of automated equipment

III. THECB Learning Outcomes (WECM)

- 1. Identify the basic types of numerical-controlled machines.
- 2. Describe the fundamental steps of planning for the use of numerical control.
- 3. Describe axes relationships and tape readout characteristics.
- 4. Develop specific programming for an NC/CNC machine.
- 5. Machine a model using the program written.

IV. Evaluation

A. Pre-Assessment

Students may request pre-assessment for the purpose of challenging this course. Any exam given for this purpose will contain a written exam as well as a practical laboratory exam.

B. Challenge Exam

Students who wish to challenge the course should contact the Testing Center and Division Deans. Challenges must be accomplished before the census cut-off date. Students who previously have received a "W" or a letter grade for the course are not eligible to challenge the course. Student must score a minimum of 85% in order to successfully challenge this course.

C. Post-Assessment

1. The instructor will maintain a continuous record of each student's progress on an institutionally approved grade sheet or computerized substitute. All instructors must keep records in such a way that information would be clear to a second party having to check grade computation in special cases. An explanatory legend should be provided on the grade sheet.
2. The final project will count at least 20% (percent) of the course grade. This part of the grade should reflect evaluation of the various CNC assignments. It is up to the individual instructor to decide how much he/she will weigh these measuring steps, but under no circumstances should the instructor base the entire grade solely on the completed final product.
3. Assignments, exams, and CNC projects will count for 80% (percent) of the course grade.
4. The instructor is required to schedule an appropriate activity for the final exam period. The completed exams and projects should be sufficient to demonstrate mastery of course content. The following are some suggested uses of the final exam period:
 - a. Students can take a previous exam and review major sections.
 - b. Students can view an appropriate audio-visual presentation.
 - c. Students can meet with the instructor to review their course work.

D. Remediation

1. Students needing assistance with assignments should contact the instructor.
2. Make-up work and retakes of quizzes may be provided at the instructor's discretion.

E. Grading Criteria: The following grading criteria will be utilized.

Course Activities	20%
Exam #1	10%
Exam #2	10%
Course Projects	40%
Final Project	20%

F. Grading Scale

90-100	=	A
80-89	=	B
70-79	=	C
60-69	=	D
0-59	=	F
Incomplete	=	I
Withdrew or Withdrawn	=	W

V. Disability Statement (Americans with Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.