SAN JOSE STATE UNIVERSITY
Department of Aviation and Technology

Tech 046: Machine Operation and Management
Fall 2016

Course Syllabus

Semester and Year:	Fall, 2016
Course Sections:	2 & 11
Class days & Times:	Lab Mon. 3:00-5:45
	Lecture Mon. 1:00 -2:45
Class Locations:	IS 121 & 122
Instructor:	D. Muntz
Office Room:	IS 130
Office Hours:	MON. NOON TO 1:00 (and by Arrangement)
Office phone	(408) 924-4372
E-mail Address:	douglas.muntz@sjsu.edu
Web Address:	http://www.sjsu.edu/people/douglas.muntz

Course Catalog Description
Manual machining processes including turning, milling, drilling, grinding, and sawing machines. Manual and computer-aided part programming. Management of machining environment including processes, tooling, instruments, equipment, personnel, safety. (Lecture 2 hours, lab 3 hours) 3 units.
A short quiz could be given at the start of each class (10 points) (don't be late)

Prerequisite
Tech 20 or equivalent

Purpose of Course
The purpose of this course is to develop fundamental skills needed for advanced study in manufacturing technology machine tool processes and management. To this end, areas of study will include: measurement, layout and inspection, bench work, metal-cutting saws and processes, drilling machines and processes, turning machines and processes, milling machines and processes, abrasive machining safety, computer-numerical control, and related management.

Required Textbooks & Materials
1) Kibbe, R. R., Neely, J. E., Meyer, R. O., & White, W. T. (2010). Machine tool practices, (9th ed.) Prentice Hall: NJ.
2) Valentino, J. V. & Goldenberg, J. (2012). Introduction to Computer Numerical Control (CNC) (5th. Edition). Prentice Hall: NJ. (Recommended)
3) Safety Glasses
5) Small hard back 3 ring binder with 60 sheets of blank printer paper
6) One set of precision dial or digital calipers
7) Two shop rags

References
DeGarmo, E. Paul, Black, J. Temple & Kohser, Ronald A. (latest edition). Materials and Processes in Manufacturing. Macmillan, New York.

Groover, M. P. (2012). Fundamentals of Modern Manufacturing: Materials, Processes and Systems. John Wiley & Sons, New York.

Machinery Handbook & Current journal and magazine technical articles.

Tlusty, G. (2000). Manufacturing Processes and Equipment. Prentice Hall, New Jersey.

Outline of Course Content and Unit Objectives

Dailey quiz	10 x 7 = 60 points*
Lathe Project	50
Mill Project	25
Final Project	100
Lab Clean-up/Activities	25
Lab safety	40
Total	**300**

Total/300 points for final LAB Grade
*Lowest score will be dropped

Lecture class and grade will depend on class participation and:

Two Formal Exams during the semester: A midterm test (50 points) and a comprehensive final (100) points. The materials to be included in these tests will be announced by the instructor.
Three outside "reading synopsis" assignments TBA 15 points each
Total 195 points

Lecture Objectives (Units and reading assignments):

Part I: Measurement, Inspection and General shop Management

Reading Assignment: Kibbe et al pp.87-191

Part II: Bench work, shop safety, Layout, Tool Management.

Reading Assignment: Kibbe et al pp. 6-85;235-299

Part III: Turning Machines, Processes and Management

Reading assignment: Kibbe et al pp.383-506

Part IV: Milling Machines

Reading Assignments: Kibbe et al pp.511-584

Part V: Other machines: Metal cutting saws, Drilling Machines, Grinding and abrasive Machines

Reading Assignments: Kibbe et al pp. 301-381 and pp.585- 658

Main study areas:

Communication

Work holding

Measurement

Layout

Separating

Joining

Conditioning

Material selection

TECH 046 SCHEDULE OF COURSE SEMESTER LAB ACTIVITIES D. Muntz

WEEK OF:	TOPICS TO BE DISCUSSED	Shop Managers	DUE
AUG. 29	ORIENTATION		
Sept. 12	GENERAL SAFETY		
SEPT.19	TOOL BIT Grinding		
SEP.26	LATHE INTRO		
OCT.3	cancel		
OCT. 10	LEAD CONTAINER		
OCT 17	MILL SAMPLE DEMO		
OCT. 24	MILL SAMPLE reading synopsis		
OCT. 31	HAMMER HANDLE DEMO		
NOV. 7	HAMMER HEAD DEMO		
NOV. 14	LAB WORK HAMMER reading synopsis		
NOV. 21	LAB WORK HAMMER		
NOV.28	LAB WORK HAMMER		
DEC.5	ALL PROCESSES reading synopsis		
DEC. 12	ALL PROCESSES	Turn in final project	Everything

Final Tuesday Dec 20 12:15

Above subject to changes