

The student will demonstrate safe workplace practices	
1	Pass all machine safety tests
2	Demonstrate personal safety practices
3	Demonstrate lockout / tagout procedure
4	Demonstrate proper cleaning, storage, use, and disposal of shop liquids
5	Demonstrate cleaning & maintaining of assigned equipment and work area
The student will demonstrate Mathematics skills	
6	Add and subtract fractions
7	Convert fractions to decimals
8	Identify basic geometric outlines
9	Demonstrate knowledge of trig tables
10	Solve trig problems
11	Demonstrate use of hand held calculator
12	Solve problems from drawings
13	Demonstrate use of Machinery's Handbook
The student will demonstrate the use and care of measuring instruments	
14	Read a scale to within 1/64 inch
15	Read a vernier scale to within .002 inch
16	Read micrometers to within .001 inch
17	Read a caliper to within .001 inch
18	Read a protractor to within one degree
19	Demonstrate use of a dial indicator
20	Demonstrate use of a test indicator
21	Demonstrate use and Assembly of Gage blocks
22	Demonstrate use of a sine bar
23	Demonstrate use of three wire method
24	Recognize surface finishes
25	Demonstrate use of a Coordinate Measurement Machine
26	Demonstrate use of an Optical Comparator
The student will be able to interpret blueprints	
27	Produce a three view print of an object
28	Interpret drawing dimensions
29	Define symbols, notes and specifications
30	Establish tolerances
31	Interpret sectional and auxiliary views
32	Interpret Geometric Positioning & Tolerancing
The student will develop a complete project work plan	
33	Prepare a bill of materials
34	Prepare a plan (or process) sheet including time and cost
35	Demonstrate basic understanding of Statistical Process Control

Student will layout a complete part per NIMS print	
36	Demonstrate use of layout tools
37	Produce layout part per NIMS print
Demonstrate use of bench tools to produce part per NIMS print	
39	Identify Machine Shop Hand tools
40	Demonstrate proper use of Hand tools
41	Demonstrate proper use of Tap & Die
42	Demonstrate proper use of Files
43	Demonstrate proper use of Hacksaw
44	Demonstrate proper use of Hand Reamers
45	Demonstrate proper use of V-blocks
46	Demonstrate proper use of Lay-Out tools
47	Select proper Finishing Techniques
48	Produce bench work part per NIMS print
The student will demonstrate the operation of horizontal & vertical band saws	
49	Demonstrate proper feeds, speeds and blades
50	Adjust Guides
51	Install Blades
52	Weld Blades
53	Demonstrate proper clamping techniques
54	Saw to 1/32 of layout lines
The student will demonstrate the operation of a drill press	
55	Perform a drilling operation
56	Perform a reaming operation
57	Perform a tapping operation
58	Perform a C'Boring, C'sinking, & Spot Facing operation
59	Demonstrate proper use of feeds and speeds
60	Sharpen a drill properly
61	Perform a set up and clamp work properly
62	Produce a conforming part per print
The student will demonstrate the operation of a lathe	
63	Identify functions of various lathes
64	Face and C'drill stock
65	Perform facing, turning and boring operations
66	Perform a C'drilling, drilling, reaming, and tapping operation
67	Perform a grooving operation
68	Produce angles using the compound
69	Demonstrate setup & use of taper attachment
70	Demonstrate correct use of insert tooling
71	Demonstrate correct use of work holding devices
72	Produce a standard 60 degree internal & external thread (chasing)
73	Indicate round stock within .001 inch

74	Indicate square stock within .001 inch
75	Produce three basic lathe tools
76	Demonstrate proper use of feeds and speeds
77	Produce a diameter mounted between centers
78	Produce an eccentric turned diameter
79	Demonstrate proper lubrication and care of equipment
80	Demonstrate use of various tools and holders
81	Produce chucking part per NIMS print
The student will demonstrate the operation of milling machines	
82	Demonstrate proper use of feeds and speeds
83	Demonstrate tramming fo a vertical head w/n .002"
84	Demonstrate indicating a vise w/n .001"
85	Demonstrate proper use of HHS & carbide cutting tools
86	Demonstrate use of an edge finder
87	Produce square block
88	Perform slotting operation
89	Perform a drilling & C'boring operation
90	Perform a boring operation within .001 inch
91	Exhibit proper use of digital readout within .001 inch
92	Produce a drilled bolt hole circle
93	Exhibit proper use of a index fixture
94	Perform an angle cutting operation
95	Complete a pocket milling operation
96	Produce a keyway
97	Perform a sawing or slitting operation
98	Product milling part per NIMS print
The student will demonstrate the operation of a grinder	
99	Demonstrate procedure to dress wheel (ped)
100	Demonstrate ring testing
101	Perform selection and mounting of wheels(surface)
102	Demonstrate grinding carbide tools(ped)
103	Demonstrate procedure to dress wheel(surface)
104	Produce a part ground flat w/n .001"
105	Demonstrate proper feed and speeds slection
106	Demonstrate proper clamping procedures
The student will demonstrate the basics of CNC machining	
107	Write point to point program
108	Write circular program
109	Write canned cycle program
110	Write complete approved program from print
111	Edit program
112	Set up and operate machining center
113	Set up and operate CNC lathe

114	Produce completed part on CNC
The student will demonstrate Metallurgy processes	
115	Demonstrate the case hardening process
116	Demonstrate the tempering process
117	Demonstrate the annealing process
118	Demonstrate physics of metal cutting
119	Exhibit need for different compositions of materials
The student will be familiar with occupations in the machining industry	
120	Recognize classified ads for employment
121	Demonstrate knowledge of needs of industry
122	Perform an internet employment search
123	Complete Portfolio
124	Complete Mock Job Interview
PERSONAL QUALITIES	
125	Work Effort
126	Safety Habits
127	Work Area Organization
128	On Task Behavior
129	Responsibility
130	Initiative
131	Team Work
132	Respect
133	Interpersonal Skills