MFG 204 : LAYOUT

Transcript title
Layout

Credits
4

Grading mode
Standard letter grades

Total contact hours
80

Lecture hours
20

Lab hours
60

Prerequisites
MFG 101 or MFG 104.

Recommended preparation
MFG 100.

Course Description
Introduces students to tools and procedures in semi-precision and precision layout of fabricated metal parts in machining and welding operations. Covers use of layout tools, flat pattern development and layout of structural shapes for processing.

Course learning outcomes
1. Utilize basic blueprint reading skills to transfer information onto material.
2. Demonstrate the use of basic layout tools and practices to fabricate basic flat pattern parts and process structural shapes.
3. Apply mathematical concepts including measurement, geometry, and trigonometry to plan and fabricate metal manufacturing components.
4. Apply basic geometric principles to calculate angles, bisectors, arcs, radius and missing dimensions of fabricated metal components.
5. Identify and describe structural steel shapes, flat stock and specialty components used in industry.
6. Implement quality control procedures to check work for errors in layouts.

Content outline
1. Layout tools and uses
2. Development of flat pattern layouts
3. Development of circular stretch outs
4. Economical layout principles
5. Layout of structural steel shapes
6. Precision layout tools
7. Precision layout
8. Layout for formed metal components
9. Calculating materials for multiple layouts
10. Kerf losses created by cutting tools
11. Tolerances in layout

Required materials
See Syllabus.