Course Description: Introduction to reading and interpreting working drawings for fabrication processes and associated trades. Use of sketching techniques to create pictorial and multiple-view drawings.

Upon completion of this course the student will be able to interpret working drawings including dimensions, notes, symbols, sections, and auxiliary views; and sketch pictorials and multi-view drawings.

Text, References, and Supplies: **Print Reading for industry, 10th Edition**
Walter C. Brown, Ryan K. Brown

This class will utilize the required text throughout the entire semester; therefore, having a book is essential.

Chapter assignments and tests will be administered using Blackboard Learn. To access the Blackboard site, navigate to blackboard.midland.edu in your web browser.

**Canvas Username:** Midland College email address
1st initial of first name + first 3 letters of last name + LAST 3 numbers of MC Student ID number.
Example: jdoe567@mail.midland.edu

**Canvas Password:** MC Student ID number (no dashes)

The student will need to provide his/her own:

Pencil
Paper
Brad/Pocket Folder

Course Goals / Objectives: The following list of course goals will be addressed in the course. The goals are directly related to the performance objectives. Upon successful completion of the course the student will:

1. Identify the standard lines on industrial drawings.
2. Describe the types of lines by appearance and purpose.
3. Identify the style of lettering recommended for standard industrial drawings.
4. Describe drawing sheet sizes and formats.
5. Identify marginal information and zoning methods for drawing sheets.
6. Identify the elements of the title block as defined by industry standards.
7. Explain the techniques for identifying parts of an assembly drawing as represented in a basic parts list.
8. Define terms related to the geometry of industrial drawings.
9. Describe orientation relationships found within 2S and 3D geometry.
10. List various properties of geometric constructions.
11. Identify 2D geometric shapes.
12. Identify 3D geometric objects.
13. Explain the relationship between an orthographic projection and a multiview drawing.
14. Identify and define the three dimensions of an object.
15. Define the three regular views.
16. Explain the characteristics of fillets, rounds, and runouts.
17. Explain the characteristics of a drawing that features a full section, half section, or offset section.
18. Compare revolved sections and removed sections.
19. Explain the purpose of auxiliary views.
20. Read prints that incorporate auxiliary views.
21. Define terms related to screw threads and fasteners.
22. Describe three methods for representing screw threads.
23. Identify common screw thread forms.
24. Identify standard pipe thread representation and designations.
25. Identify terms and measurements associate with dimensioning mechanics.
26. Identify symbols that have been standardized for dimensioning notations.
27. Explain choice and placement rules drafters use.
28. Identify and discuss various systems and methods for dimensioning.
29. Define terms related to tolerancing.
30. Explain how tolerances are expressed on a drawing.
31. Calculate tolerances or limits for mating parts based on maximum material conditions and allowance.
32. Identify and interpret general notes on a drawing.
33. Read and interpret specification for holes and additional processes such as counterbores and countersinks.
34. Explain common terms related to surface quality and surface texture symbols.
35. Explain standard practices for applying surface texture symbols on a print.
36. Describe the purpose and objectives of geometric dimensioning and tolerancing (GD&T).
37. Identify current and former ASME Y14.5 symbols used in GD&T.
38. Define terms related to GD&T.
39. Read and interpret basic applications of feature control frames for each of the GD&T control systems.
40. Describe drawing practices related to drawing revisions.
41. Identify revision information on an industrial print.
42. Describe how detail drawings are define and categorized in industry.
43. List and describe other specialized types of drawings used in industry.
44. Explain different ways of creating pictorial and multiview assembly drawings used in industry.
45. Identify and read parts list information about assembly drawings that are drawn for multiple variations.

Student Contributions and Class Policies:

1. Students are expected to exhibit professional behavior during scheduled class times.
2. Regular and punctual attendance is expected of all students in all classes for which they have registered.
3. All absences are considered to be unauthorized unless the student is absent due to sickness or emergencies.
4. The instructor is responsible for judging the validity of any reasons given for absence.
5. Students will not be allowed to make up an examination missed due to an absence unless they have reasons acceptable to the instructor.
6. Students may be dropped from a class by the registrar, on or before the twelfth day of class, upon recommendation of the instructor who feels the student has been unjustifiably absent or tardy a sufficient number of times to preclude meeting the course objective.
7. After the twelfth day of class, it is the student's responsibility to initiate the drop in the Office of Student Services. Failure to do so may result in the students receiving a grade of “F.”
8. Students are responsible for maintaining, organizing, and backing-up copies of all digital files. Failure to maintain an up-to-date backup may result in data loss.

Evaluation of Students:

<table>
<thead>
<tr>
<th>Regular daily work / homework</th>
<th>40%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Periodic tests</td>
<td>10%</td>
</tr>
<tr>
<td>Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Attendance</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
</tbody>
</table>

90 and above   A  
80-89           B  
70-79           C  
60-69           D  
0-59            F  

Course Schedule:

This class meets one time a week, for a total of three (3) class hours.

Due dates for course assignments will be announced throughout the semester. This will be subject to the progression of the class, therefore attendance is very important.

Scans Information:

INFORMATION:
Students will acquire and evaluate information from existing sources and determine its relevance and accuracy as needed to build a systematic information base. Students will employ computers to acquire, organize, analyze, and communicate information.
TECHNOLOGY:
Applies technology to task, understands overall intent and proper procedures for setup and operation of equipment and computer hardware and software.

READING:
Students will locate, understand, and analyze data in documents including manuals, graphs, and schedules to perform tasks. The students will learn from a text to determine the main idea or essential message, the relevant facts and specifications, the meaning of unknown or technical vocabulary, and the appropriateness of theories of other writers.

WRITING:
The students will communicate thoughts, ideas, information, and messages in writing. They will record information completely and accurately, compose and create documents, use language, style, organization, and format information to the subject matter.

MATHEMATICS:
Approaches practical problems by choosing appropriately from a variety of math techniques. Students will use basic math calculations throughout the course work.

LISTENING/SPEAKING:
Students will receive, attend to, interpret, and respond to verbal messages and other cues such as body language in ways that are appropriate to the purpose; for example, to comprehend; to learn; to critically evaluate; to appreciate; or to support the speaker.

PERSONAL QUALITIES:
The students will display responsibility, self-esteem, sociability, self-management, integrity and honest toward goal attainment and perseverance.

Students with Disabilities:
Any student who, because of a disabling condition, may require some special arrangements in order to meet course requirements should contact Shep Grinnan as soon as possible. Mr. Grinnan’s office is located in the Scharbauer Student Center Building. These conditions may include documented physical or educational disabilities. Please be aware that services or accommodations are not automatic. Each student must request them and secure the proper authorizations/documentation.
Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individuals have been designated to handle inquiries regarding the non-discrimination policies: Tana Baker, Title IX Coordinator/Compliance Officer, 3600 N. Garfield, SSC 242, Midland, TX 79705, (432) 685-4781, tbaker@midland.edu; Natasha Morgan, Director Human Resources/Payroll, 3600 N. Garfield, PAD 104, Midland, TX 79705, (432) 685-4534, nmorgan@midland.edu. For further information on notice of non-discrimination, visit http://wdcrobc01.ed.gov/CFAPPS/OCR/contactus.cfm or call 1 (800) 421-3481.

Spanish

Midland College no discrimina por motivos de raza, color, nacionalidad, sexo, discapacidad, o edad en sus programas o actividades. Las siguientes personas han sido designadas para responder a cualquier pregunta o duda sobre estas políticas no discriminatorias: Tana Baker, Title IX Coordinator/Compliance Officer, 3600 N. Garfield, SSC 242, Midland, TX 79705, (432) 685-4781, tbaker@midland.edu; Natasha Morgan, Director Human Resources/Payroll, 3600 N. Garfield, PAD 104, Midland, TX 79705, (432) 685-4534, nmorgan@midland.edu. Para más información sobre estas políticas no discriminatorias, visite http://wdcrobc01.ed.gov/CFAPPS/OCR/contactus.cfm o llame al 1 (800) 421-3481.
Program Information:
Derek Gasch, Faculty
E-Mail: dgasch@midland.edu
Office Phone: (432) 681-6314

Rm 129 ATC
Advanced Technology Center

Office Hours: TBA

Curt Pervier, Dean
Applied Technology

Division Office
Applied Technology

Lisa Hays
Division Secretary
Room 143A TC
(432) 685-4676
Fax: (432) 685-6472

Helen Arrieta
Division Clerk
Applied Technology
(432) 685-4664