

**Midland College**  
**Syllabus**  
**DFTG 2306**  
**Machine Design**

**Course Description:**

Theory and practice of design. Projects in problem-solving, including press fit, bolted and welded joints, and transmission components. Software: Autodesk Inventor. Prerequisite(s): DFTG 2302 and DFTG 2340

**Text, References, and Supplies:**

Parametric Modeling with Autodesk Fusion 360,  
Randy Shih

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

Software: Fusion 360

NOTE: Students will be advised of the software version and book edition on the first day of class.

**Students Learning Outcomes and Core Competencies:**

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. Understand the basics of 3D modeling in Fusion 360
2. Create components
3. Use sketch geometry
4. Use geometric constraints
5. Use dimensional constraints
6. Create base features from sketches
7. Use the browser and timeline to modifying existing sketches and model features
8. Understand modeling strategy and design intent and their application
9. Create components with multiple sketches and features
10. Understand the practical uses of parametric constraints (dimensions)
11. Create features from projected geometry
12. Understand the importance of parent/child relationships in features
13. Create multiview 2D drawings from 3D models
14. Use component properties to determine physical properties
15. Create isometric views and other pictorial views from 3D model
16. Create multi-view machine drawings
17. Utilize work features for feature/model creation
18. Use symmetrical features, including: revolved, mirrored, and patterns
19. Use advanced 3D construction tools including, sweep, loft, and shell
20. Create assemblies using multiple components and assembly constraints and joints

21. Change material and appearance of components
22. Understand the basics of the RENDER environments
23. Understand the basics of the MANUFACTURE environment
24. Understand the basics of the SIMULATION environment

**Student Contributions, Responsibilities and Class Policies:**

- 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.
- Students are expected to exhibit professional and courteous behavior on campus, in the classrooms and labs.
- Cell phones should be silenced while in class.

**Attendance Policy**

Regular and punctual attendance is expected of all students in all classes for which they have registered. It is the obligation of the student to notify the instructor of all absences as soon as possible and make up all missed work. All absences are considered to be unexcused until a valid reason is provided. It is the responsibility of the instructor to judge the validity of any reasons given for an absence.

**Withdrawal Policy**

It is the student's responsibility to initiate the withdrawal in the Office of Student Services. Students must complete an official withdrawal form either in person in the Student Services office, online or by written request. Failure to do so may result in the student receiving a grade of "F."

The last day for withdrawal for each registration period is published in the catalog and the current course schedule. Online withdrawal requests must be made on or prior to the dates listed.

**Scholastic Dishonesty & Academic Misconduct**

Midland College encourages high academic standards, including student responsibility for original work. As a part of this stance, Midland College endorses specific definitions and guidelines regarding scholastic dishonesty and academic misconduct, including the areas of cheating, plagiarism, and collusion.

Definitions and full policy can be found in the Student Rights & Responsibilities section of the online catalog at [catalog.midland.edu](http://catalog.midland.edu).

**Evaluation of Students:**

*Assignments*.....45%  
*Attendance & Regular Daily Work*.....35%  
*Final Project/Exam*.....20%

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

**Course Schedule:**

This course meets two or four times a week, for a total of two (2) lecture hours and four (4) lab hours.

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

**AMERICANS WITH DISABILITIES ACT (ADA):**

Midland College provides services for students with disabilities through Student Services. In order to receive accommodations, students must visit [www.midland.edu/accommodation](http://www.midland.edu/accommodation) and complete the Application for Accommodation Services located under the Apply for Accommodations tab. Services or accommodations are not automatic, each student must apply and be approved to receive them. All documentation submitted will be reviewed and a “Notice of Accommodations” letter will be sent to instructors outlining any reasonable accommodations.

**NON DISCRIMINATION POLICY:**

Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individual has been designated to handle inquiries regarding the non-discrimination policies:

**Tana Baker**

Title IX Coordinator/Compliance Officer

3600 N. Garfield, SSC 131

Midland, Texas 79705

(432) 685-4781

[tbaker@midland.edu](mailto:tbaker@midland.edu)

For further information on notice of non-discrimination, visit the ED.gov Office of Civil Rights website, or call 1 (800) 421-3481.

**Faculty Information:**

Department Chair/Professor: Derek Gasch  
Phone: O: 432-686-4809  
Cell Phone: 432-934-8492  
Office Hours: TBD

Office: 235 LRC  
Email: [dgasch@midland.edu](mailto:dgasch@midland.edu)

Professor: Vanessa Hyatt  
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Office: 132 ATC  
Email: [vbaker@midland.edu](mailto:vbaker@midland.edu)

Adjunct Instructor: Sean Chaney  
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Cell Phone: 432-889-2694  
Office Hours: TBD

Office: 193 TC  
Email: [schaney@midland.edu](mailto:schaney@midland.edu)

Adjunct Instructor: Kevin Starnes  
Cell Phone: 432-349-0410  
Office Hours: TBD

Email: [kstarnes@midland.edu](mailto:kstarnes@midland.edu)

Adjunct Instructor: Gabriel Bustillos  
Cell Phone: 432-557-9877  
Office Hours: TBD

Email: [gbustillos@midland.edu](mailto:gbustillos@midland.edu)

Students are encouraged to contact the instructor at any time; however, making an appointment will guarantee the instructor's availability at a specific time.

**Division Information:** Applied Technology

Division Dean: Curt Pervier

TC 143

Phone# 432-685-4676

Division Secretary: Lisa Tanner

TC 143

Phone# 432-685-4676