

Introduction to Engineering Design

Course Syllabus

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Course Description: Introduction to Engineering Design (IED) is a one-credit course designed to offer students an overview of the engineering profession and fundamental skills utilized in general engineering. Simulations and projects promoting teamwork, leadership and workplace skills offer further opportunities for application of knowledge and skills.

Required Materials:

- Composition book for notes
- Pocket folder for handouts
- Pencil
- Black or blue ink pen (fine tip preferred)
- Pink eraser or art gum eraser
- All other materials are provided using class fees.
- Course & TSA Fee
 - **Course Fee:** \$65 total by the end of the third week of school
 - \$40 for computer lab supplies fee. This also helps pay for certification testing, lab supplies, and PPE.
 - \$25 for TSA membership.
 - Cash or checks made to ACTC. You can also pay on GoFan by scanning the QR code with your phone.



- Scan the QR Code and select tickets for IED and TSA.

TSA: Technology Student Association is a co-curricular component of IED. Students are encouraged to become participating members of the organization as it enhances classroom instruction, helps develop leadership skills, and provides opportunities for growth and service. TSA dues are \$25.

Course Objectives: The student will be able to:

- Work safely and in cooperation with others
- Successfully complete academic concepts related to engineering topics
- Work independently as well as in team situations to complete projects
- Incorporate a real-world work ethic and attitude in completing all tasks.

Available Industry Credentials: Autodesk Fusion 360 Certified User

Instructional Methods: PowerPoint presentations, cooperative group activities, class discussions, demonstrations, note-taking, role-playing, online coursework, pictures and videos, others as needed.

Course Outline:

1. Design Process	6. Reverse Engineering
2. Technical Sketching and Drawing	7. Documentation
3. Measurement and Statistics	8. Advanced Computer Modeling
4. Modeling Skills	9. Design Team
5. Geometry of Design	10. Design Challenges

Assessment Procedures: Daily assignments (such as bell ringers), tests and quizzes, performance assessments, laboratory work, project reports, assignment completion, class discussion/participation, and project presentation are used in assessing student learning and progress throughout the course. Work not turned in or attempted will receive a zero for the assignment. Students who have an excused absence will have 3 days to make up work.

Grading:

Major Grades **65%** Tests, projects, portfolio

Minor Grades **35%** Daily work, class assignments, and employability grade

Grading Scale: 100-90 A 89-80 B 79-70 C 69-60 D 59-0 F

Class Rules & Expectations:

1. The student will adhere to the guidelines of student conduct set forth in the ACBOE Code of Conduct.
2. Students are to be seated when the tardy bell rings.
3. Tardies are dealt with according to ACTC policy.
4. Classwork is due on the assigned date. I do not accept late work, unless it is due to an excused absence.
5. A zero is earned under the following conditions:
 - cheating (ex. talking during a test, cheat sheets, etc.)
 - failure to make-up missed work due to an excused absence within 3 days
 - an unexcused absence

Expectations	Consequences
1. Be Respectful 2. Be Responsible 3. Be Resourceful	1. Student/Teacher conference 2. Parent contact 3. Parent/Teacher Conference with admin 4. Office referral

*A severely disruptive student will be sent immediately to the office.

Make-up Work Procedure: Attendance is required. You have three school days to turn in makeup work. **You are responsible for acquiring and completing your make-up work.** However, you are welcome to ask questions about and get help with any make-up work that you don't understand.

Cleanliness: Please make sure the area around your desk is clean and neat before you leave each day.

Personal Devices: The possession/use of personal electronic devices during the instructional day is prohibited by state law. This will be enforced according to the ACBOE Code of Conduct.

Email: Please make sure you have a personal Gmail account. This will be used to sign up for your Autodesk account in our classroom.

Social Media: We have a class Instagram page where we document our journey through the year. You will be featured on it! Follow @actctsa on Instagram.

Keep these 3 pages. Please return the fourth page.

It is the policy of ACBOE that no student shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination in any program on the basis of sex, race, color, religion, national origin, age, handicapping condition, belief, creed or ethnic group.

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*Your first assignment: Please read the attached information and sign below, have a parent/guardian read the information and sign below, and bring the contract back to class to receive credit. Thank you for your cooperation! I am looking forward to a great year. Parents, please feel free to contact me if you have any questions.

I (we) have read the information about the Engineering curriculum, grading policy, student responsibility, and classroom procedures for Mr. Cooper. I understand my image may be featured on the ACTC website and social media, lobby TV, or ACTC social media pages.

I have read the classroom management plan and agree to follow all rules and procedures.

Student Signature

Date

Awesome! Now get your parents to sign this paper, give you the class fee, and bring this form and money to class.

Parent/Guardian Signature

Date

Parent/Guardian preferred phone number: _____

Parent/Guardian preferred email address: _____



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