

WESTERN TECHNICAL - COMMERCIAL SCHOOL



COURSE TITLE: Technological Design

CODE: TDJ201

SUBJECT AREA: Tech

TEXTBOOK: Online

TEACHER NAME: Mr. Franzen

DATE: Sept 2013

PREREQUISITE: None (Open)

**COURSE COST
MATERIAL FEE:** None

COURSE DESCRIPTION:

This course provides students with opportunities to apply a design process to meet a variety of technological challenges. Students will research projects, create designs, build models and/or prototypes, and assess products and/or processes using appropriate tools, techniques, and strategies. Student projects may include designs for homes, vehicles, bridges, robotic arms, clothing, or other products. Students will develop an awareness of environmental and societal issues related to technological design, and learn about secondary and postsecondary education and training leading to careers in the field. Focus will support robotics and Robo program here at Western.

COURSE DESTINATION: MANUFACTURING, CONSTRUCTION, PROGRAMMING, COMPUTERS, ENGINEERING, TRANSPORTATION AND ROBOTICS

COURSE UNITS:

Unit	Description	Length	Evaluation Strategies
1	Design Process (SPICE) and 3D Output	2 Weeks	Research, assignments, quiz, practical activities
2	Traditional Communication	2 Weeks	Assignments, test, & practical activities
3	2D AutoCAD	2 Weeks	Assignments, quiz, practical activities, & demonstration
4	3D Parametric Design -ProE	4 Weeks	Assignments, quiz, test, practical activities, & demonstration
5	Design Creation with final 3D Printing	3 Weeks	Assignments, quiz, practical activities, & demonstration
6	Robotic fields: mechanical, electrical, pneumatics, and programming	3 Weeks	Assignments, quiz, test, practical activities, & demonstration
7	Web Portfolio build	2 Weeks	Assignments, practical activities, & presentation

OVERALL EXPECTATIONS: By the end of the course students will...

- A1. identify and describe the purpose, scope, and steps of a design process;**
- A2. identify and describe tools, strategies, and skills needed for project research, planning, and organization;**
- A3. demonstrate an understanding of how design ideas are represented graphically;**
- A4. explain the purpose of building models and prototypes, and identify tools, materials, and methods for building and testing them;**
- A5. demonstrate an understanding of communications methods used in the design process.**

- B1. research, plan, and organize projects, using a design process and appropriate methods and tools;**
- B2. apply appropriate methods for generating and graphically representing design ideas and solutions;**
- B3. create and test models using a variety of techniques, tools, and materials;**
- B4. use suitable communication methods throughout the design process.**

- C1. demonstrate an understanding of environmentally responsible practices, and apply them throughout the technological design process;**
- C2. describe how society influences technological innovation and how technology affects society.**

- D1. apply appropriate health, safety, and environmental practices throughout the design process;**
- D2. identify careers related to technological design, and the education and training required for them.**

CLASSROOM EXPECTATIONS

- Come to class on time and be prepared and willing to actively participate in every lesson.
- Treat others with respect and courtesy.
- Ask the teacher for extra help if needed.
- Be an active participant.
- Be on time and prepared for class every day.
- Bring a 3-ring binder with paper, pen, pencil, ruler, calculator, and 1 GB flash memory stick.

ATTENDANCE MISSED TESTS AND EVALUATIONS

- Bring a note from parents the day after an absence to explain the absence.
- Be aware that a mark of zero will be assigned to students who miss presentations, tests or assignments without a valid explanation. It is the student's responsibility to make arrangements, ahead of time, for any evaluations that are missed. If a student misses an evaluation for an unforeseen reason such as illness or family emergency, the student must bring a note signed by a parent or guardian and be prepared to write/make-up the evaluation immediately upon return to school.

ACADEMIC INTEGRITY

- Plagiarism and/or copying will result in a mark of **zero** for everyone involved. Further action may be taken including suspension from school. Teachers will clearly define and discuss consequences of plagiarism with students at the beginning of each semester.

LATE ASSIGNMENTS

- All assignments must be handed in to the teacher on the due date. Late marks will be deducted from assignments handed in past the due date but prior to the cut off date. A mark of zero will be given to the student if the assignment is handed in after the cut-off date.

MISSED EXAMINATIONS

- Students are required to write all scheduled examinations. A student who misses any examination due to illness must present a medical note, stating that the doctor was aware that a medical reason prevented the student from writing the exam.

TEACHING/ASSESSMENT/EVALUATION STRATEGIES

Learning Activities: Demonstrations, presentations, illustrations, tutorials, hands-on activities, computers, practical projects

Culminating Activities: Final practical project and portfolio presentation

EVALUATION OF STUDENT ACHIEVEMENT

Student achievement is measured relative to curriculum expectations across four weighted Achievement Categories (Knowledge/Understanding, Thinking/Inquiry, Communication, Application).

Term Work: 70% (Knowledge/Understanding, Thinking/Inquiry, Communication, Application)

Culminating Activities: 30% Final practical project

Learning Skills including: Works Independently; Team Work; Organization; Work Habits; and Initiative are evaluated on each Report Card as: **E** (excellent); **G** (good); **S** (satisfactory); or **N** (needs improvement).

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Teacher's Signature

Student's Signature

Parent's Signature