

WESTERN TECHNICAL - COMMERCIAL SCHOOL COURSE OUTLINE



COURSE TITLE:	Exploring Technologies - Robotics	CODE:	TIJ1OR
SUBJECT AREA:	Tech	RESOURCES:	Online
TEACHER NAME:	Mr. Franzen, Mr. Laurin, & Mr. Schneider	DATE:	Feb 2013
PREREQUISITE:	None (Open)	COURSE COST MATERIAL FEE:	None

COURSE DESCRIPTION:

This course enables students to further explore and develop technological knowledge and skills introduced in the elementary science, technology, and Design programs. Students will be given the opportunity to develop solutions to various design challenges, fabrication of models or prototypes of those solutions, create products and/or provide services related to the various technological areas or industries, working with a variety of tools, equipment, and software commonly used in industry. Students will develop an awareness of environmental and societal issues, and will begin to explore secondary and postsecondary education and training pathways leading to careers in technology and robotic -related fields. This course is made up of three class rotations, each 33.33% of final mark.

COURSE DESTINATION: PREPARATION FOR GRADE 10 RELATED COURSES SUCH AS MANUFACTURING, CONSTRUCTION, TECHNICAL DESIGN, TRANSPORTATION, AND ROBOTICS

COURSE UNITS:

Unit	Description	Length	Evaluation Strategies
1	Technology Design: Safety, Design Process, Technical sketching isometric & orthographic views, Dimensioning, 2D CAD, 3D models parts, assemblies, and drawings, 3D printing, project design/print	6 Weeks	Sketching communication, PPT presentation, project designs, 2D & 3D CAD models, assemblies, and drawings, idea design competition
2	Engineering Technology: Safety, Basic Electronics - circuit & components, Printed Circuit Boards - circuit layout & process, Computer Numeric Controls - G-Code, operation, creation, and Soldering techniques and procedures	6 Weeks	Safety, machine tools and equipment check, PPT presentation, microbug & electric car creation, circuit testing. Project competitions
3	Manufacturing Technology: Shop / Machine Safety, Measurements, Co-ordinate System, Speed & Feeds, Project Planing, Machine/tool Set-up and Operation, G-Code Programming and project creation	6 Weeks	Operation and safety check; Measurement understanding; planing report, and practical build projects

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

-demonstrate an understanding of the fundamental concepts and skills required in the planning and development of a product or service, including the use of a design process and/or other problem-solving processes and techniques;

-demonstrate the ability to use a variety of appropriate methods to communicate ideas and solutions;

-evaluate products or services in relation to specifications, user requirements, and operating conditions.

-use problem-solving processes and project-management strategies in the planning and fabrication of a product or delivery of a service;

-fabricate products or deliver services, using a variety of resources.

-demonstrate an awareness of the effects of various technologies on the environment;

-demonstrate an awareness of how various technologies affect society, as well as how society influences technological developments.

-follow safe practices and procedures when using materials, tools, and equipment;

-identify careers in various technological fields, and describe the educational requirements 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.
- Respect safety rules and the safety of others.
- Bring a 3-ring binder with paper, pen, pencil, eraser, ruler, calculator, safety glasses, and a USB 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, project testing, and project competitions

EVALUATION OF STUDENT ACHIEVEMENT

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

Term Work: Three class/shop rotation/units (6 weeks * 3) with each rotational unit worth 33% of final mark

Learning Skills including: Responsibility, Organization, Independent Work, Collaboration, Initiative, and Self-Regulation are evaluated on each Report Card as: **E** (excellent); **G** (good); **S** (satisfactory); or **N** (needs improvement).

WESTERN TECHNICAL-COMMERCIAL SCHOOL
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Teacher's Signature

Student's Signature

Parent's Signature