

WGSD Curriculum
Industrial Technology Department

Course: Advanced Robotics

Grade Level: 10-12

LG 5 Using Software

High Priority Standards

International Technology Education Association <http://www.iteaconnect.org/TAA/PDsF/xstnd.pdf>

Standards for Technological Literacy : Abilities for a Technological World

Standard 11. Students will develop abilities to apply the design process.

Standard 12. Using and maintaining technological products and systems.

Standard 13. Assessing the impact of products and systems.

Learning Goal	Proficiency Scale
Students will be able to apply advanced programming skills to the engineering process.	Level 4: Student demonstrates an in-depth inference or advanced application or innovates with the learning goal. Level 3: Student demonstrates mastery with the learning goal as evidenced by: <ul style="list-style-type: none">• Creating a vision for what the robot will be like and what it will do.• Building a prototype.• Writing a program-writing “pseudo-code” in an advanced software environment.• Running trials of the robot to see if it will do what it has been designed for (Prototyping Round 2).• Designing modifications and/or program modifications.• Reflecting on feedback and finishing the robot.• Applying characteristics of the iterative design process to solve problems. Level 2: Student demonstrates he/she is nearing proficiency by: <ul style="list-style-type: none">• Recognizing and recalling specific vocabulary, such as: LabVIEW for LEGO MINDSTORMS software, abutment, activation, amplitude, analysis, angle,

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assembly, automation, axis, balance, bearing, blueprint, calculation, cantilever, combustion, component, compress, constriction, construction, control, conversion, conveyance, cooling, coupling, crank, current, degree, diagram, electrical, element, energy, engine, excavation, expert, fabrication, flexible, flow, fluid, force, frame, fuel, fulcrum, gimbals, hoist, horizontal, hydraulic, instrument, intersection, joint, lift, load, machine, mechanize, motion, object, operation, physics, plumb, pneumatic, precision, process, production, project, propulsion, pulley, radiate, ream, refine, regulation, retrofit, rotation, scheme, schooling, scientific, sequence, shape, slide, stability, strength, structure, superstructure, suspension, technology, tools, transform, transmission, transmit, turbine, vacuum, valve, vertical, vibration, weight, weld, withstand

- Performing processes such as:
 - Applying concepts associated with research and development, invention and innovation, and experimentation.
 - Identifying steps in the iterative design process.

Level 1: Student demonstrates a limited understanding or skill with the learning goal.