

MEDICAL ROBOTICS

GRADES 8–12

This document lists the Michigan learning standards addressed by Medical Robotics, True Robotics' grades 8-12 robotics curriculum. Standards are grouped by subject and grade level, with codes and wording as published by the Michigan Department of Education.

9

SCIENCE

7

CS

16

TOTAL STANDARDS

SCIENCE

9 STANDARDS

Based on the Michigan state standards

GRADE	CODE	STANDARD
8	MS-LS1-3	Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.
8	MS-PS2-2	Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.
8	MS-ETS1-2	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
8	MS-ETS1-4	Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.
9–12	HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
9–12	HS-LS1-3	Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.
9–12	HS-ETS1-1	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
9–12	HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
9–12	HS-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.

COMPUTER SCIENCE

7 STANDARDS

Based on the Michigan state standards

GRADE	CODE	STANDARD
8	2-AP-10	Use flowcharts and/or pseudocode to address complex problems as algorithms.
8	2-AP-11	Create clearly named variables that represent different data types and perform operations on their values.
8	2-AP-12	Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.
8	2-CS-02	Design projects that combine hardware and software components to collect and exchange data.
9–10	3A-AP-13	Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests.
9–10	3A-AP-17	Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects.
9–10	3A-IC-24	Evaluate the ways computing impacts personal, ethical, social, economic, and cultural practices.

SOURCES & NOTES

- The official science and computer science standards for Michigan, as published by the Michigan Department of Education.
- Codes and standard wording are reproduced from the official standards documents. Clarification statements, examples and assessment boundaries are omitted.
- Grade shows the grade level at which True Robotics lessons address each standard. A range (for example K-2) marks a standard written for a grade band.
- Standards text remains the property of its publisher and is reproduced here for alignment reference only.
- A lesson-level crosswalk is available on request at info@truerobotics.org.