Standards in Advanced Automation

#	Statement	assessments:	Unit 1: Functions and Modular Code	Unit 2: Managing State	Unit 3: Collaborative Code	Unit 4: Control Algorithms and APIs	Unit 5: Machine Learning	Unit 6: Measurement and Data Processing	#PS CSE
		Rubrics							
1	Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.	Unit 4	Module Maker			Control Systems Challenge			PS-CSE-20
2	Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions.	Unit 1		Iterative design for Quarter 1			Project Machine Learning		PS-CSE-15
3	Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects.	Unit 2	Module Maker						PS-CSE-16
4	Construct solutions to problems using student-created components, such as procedures, modules and/or objects.	Unit 1	Drink Machine						PS-CSE-22
5	Illustrate ways computing systemsimplement logic,input, and output through hardware components.	Unit 1		IO Logic					PS-CSE-11
6	Compare levels of abstraction and interactions between application software, system software, and hardware layers.	Unit 2		W10-5					PS-CSE-9
7	Justify the selection of specific control structures when tradeoffs involve implementation, readability, and program performance, and explain the benefits and drawbacks of choices made.	Unit 2		W11-2					PS-CSE-14
8	Design and develop computational artifacts working in team roles using collaborative tools.				collaborative code and generative art				PS-CSE-19
9	Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests.	Unit 4				Control Systems Challenge	W10-4		PS-CSE-12
10	Demonstrate code reuse by creating programming solutions using libraries and APIs.	Unit 4				Control Systems Challenge	W10-4		PS-CSE-23
11	Modify an existing program to add additional functionality and discuss intended and unintended implications (e.g., breaking other functionality).	Unit 5					Project ML		PS-CSE-25
12	Implement an artificial intelligence algorithm to play a game against a human opponent or solve a problem.	Unit 5					Project ML		PS-CSE-21
13	Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.	Unit 6						Unit 6 Project	PS-CSE-13
14	Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs.	Unit 6						Unit 6 Project	PS-CSE-17
15	Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors.	Unit 6						Passion Project	PS-CSE-10
16	Evaluate and refine computational artifacts to make them more usable and accessible.	Unit 6						Passion Project	PS-CSE-18