

Case	Challenge	Course	Metric	Target Score Criteria	Max Points	Min Points	Max Occurrences	Points Per Occurrence	Metric Notes
AutoDrive Challenge Scoring Rubric - v2020.1									
Static Events									
	Social Responsibility		Report Score		50	0			None
	Social Responsibility		Evaluation Score		50	0			None
	Concept Design		Report Score		150	0			None
	Concept Design		Evaluation Score		50	0			None
	Static Events	Total Score:			300				
Technical & Safety Reports									
	Roof Rack Antenna Mounting		None		0	0			None
	Year 3 Updates		Report Score		20	0			None
	Autonomous Vehicle Safety Assessment		Report Score		30	0			None
	Technical & Safety Reports	Total Score:			50				
MathWorks Simulation Challenge									
	MathWorks Simulation Challenge		Total Score		50	0			None
	MathWorks Simulation Challenge	Total Score:			50				
Dynamic Challenge									
DC.x	Dynamic Challenge	*	Per-Segment Metrics	Accumulate per-segment points from 10 segments across 3 scored days.	600	0	10	60	
DC.DNF1	Dynamic Challenge	*	Time Limit	Teams have one 20 minute window to complete the route. A route may contain between 2 and 4 segments.	0	-240	1		DNF - All points in a day's route obtained after the DNF occurs will be forfeited.
	Dynamic Challenge	Total Score:			600				
Per-Segment Metrics:									
DC.x.1	Object Perception & Interaction				32				Point distribution in this category will vary, depending on the objects encountered on each segment. Each occurrence will be equally weighted and sum to 32 points for any given segment.
DC.x.1.1	Dynamic Challenge	(Each Segment of 10 total)	React Properly to Signal	<b>Green:</b> Decelerate if necessary for acceleration metrics, but do not stop. <b>Solid Red:</b> Come to a complete stop within 3 meters of the limit line preceding the intersection, with no part of the vehicle past the limit line. Remain stopped until legally allowed to proceed. <b>Flashing Red:</b> Come to a complete stop within 3 meters of the limit line preceding the intersection, with no part of the vehicle past the limit line. Remain stopped until legally allowed to proceed. <b>Stop Sign:</b> Come to a complete stop no more than 3 meters before any applicable limit line[1], and proceed into the intersection when safe and legal to do so. Turn Only: Complete a required turn as mandated by a Left Turn Only or Right Turn Only sign.  1. If no explicit limit line is painted, vehicles shall interpret the plane of the sign as the limit line.					
DC.x.1.2	Dynamic Challenge	(Each Segment of 10 total)	React Properly to Traffic Control Signage						Competitors will also see other types of traffic control signage which will not be scored by this metric.
DC.x.1.3	Dynamic Challenge	(Each Segment of 10 total)	React Properly to Uncontrolled Intersection	Vehicle must enter and exit uncontrolled intersections without stopping.					
DC.x.1.4	Dynamic Challenge	(Each Segment of 10 total)	Avoid Static Objects	<b>Bicycles:</b> Vehicle must remain a minimum of 3 feet from all bicyclists. <b>Other:</b> Avoid colliding with any static object obstructing the vehicle's path of travel.					
DC.x.1.5	Dynamic Challenge	(Each Segment of 10 total)	Avoid Dynamic Objects	<b>Pedestrians:</b> When required to stop[1], vehicles must stop before the limit line preceding the crosswalk, with no part of the vehicle past the limit line[2], and allow the pedestrian to completely cross the roadway before proceeding. <b>Other Dynamic Objects:</b> Avoid colliding with any dynamic objects obstructing the vehicle's path of travel.  1. Vehicles shall only stop when a pedestrian is in the roadway or at the edge of the roadway. 2. If no explicit limit line is painted, vehicles shall interpret the leading crossing boundary or leading edge of hash marks as a limit line.					Competitors will not be penalized for exceeding deceleration limits to avoid dynamic objects.

Case	Challenge	Course	Metric	Target Score Criteria	Max. Points	Min. Points	Max. Occurrences	Points Per Occurrence	Metric Notes
DC.x.1.6	Dynamic Challenge	(Each Segment of 10 total)	Intersection Lane Selection	Vehicle crosses into the intersection while inside the proper lane to execute the desired turn, and exits the intersection into the appropriate lane.					Left turns must exit in the leftmost lane; Right turns must exit into the rightmost lane.
DC.x.2	Destination Objectives				10				Teams must autonomously arrive at the destination address [DC.x.3.2] in order to be eligible for Destination Objective points.
DC.x.2.1	Dynamic Challenge	(Each Segment of 10 total)	Arrive at Location	Arrive to within 15 meters of the destination address at the end of a segment.	2	0	1	2	
DC.x.2.2	Dynamic Challenge	(Each Segment of 10 total)	Stop at Address	Vehicle must come to a complete stop within 15 meters of the destination address.	2	0	1	2	
DC.x.2.3	Dynamic Challenge	(Each Segment of 10 total)	Shift Into Park	Vehicle must autonomously shift to park and remain in park for a minimum of 5 seconds.	2	0	1	2	
DC.x.2.4	Dynamic Challenge	(Each Segment of 10 total)	Shift Into Drive	Vehicle must autonomously shift to drive.	2	0	1	2	The last segment of each route will have this metric automatically awarded upon shifting into park.
DC.x.2.5	Dynamic Challenge	(Each Segment of 10 total)	Leave the Vicinity of the Address	Proceed to the next destination autonomously. Points will be awarded when vehicle has left the vicinity of the address and passed the next segment restart marker.	2	0	1	2	The last segment of each route will have this metric automatically awarded upon shifting into park.
DC.x.3	Autonomous Mode Route Completion				10				Teams must autonomously arrive at the destination address [DC.x.3.2] in order to be eligible for Route Completion points.
DC.x.3.1	Dynamic Challenge	(Each Segment of 10 total)	Route Optimization	The vehicle must take the most direct path between the start and destination addresses.	2	0	1	2	
DC.x.3.2	Dynamic Challenge	(Each Segment of 10 total)	Autonomous Mode	Vehicle must remain in autonomous mode from the start address or segment start marker to within 50 meters of the destination address. Any exit of autonomous mode will be also considered a Manual Takeover DNF for the segment.	8	0	1	8	
DC.x.4	Drive Quality Metrics				8				Teams must autonomously arrive at the destination address [DC.x.3.2] in order to be eligible for Drive Quality Metric points.
DC.x.4.1	Dynamic Challenge	(Each Segment of 10 total)	Peak Longitudinal Acceleration	+1 pts for staying below 3.5 m/s <sup>2</sup> ;	1	0	1	1	
DC.x.4.2	Dynamic Challenge	(Each Segment of 10 total)	Peak Longitudinal Deceleration	+1 pts for staying above -3.5 m/s <sup>2</sup>	1	0	1	1	Competitors will not be penalized for exceeding deceleration limits to avoid dynamic objects.
DC.x.4.3	Dynamic Challenge	(Each Segment of 10 total)	Peak Longitudinal Acceleration Gradient	+1 pts for staying below 15 m/s <sup>3</sup>	1	0	1	1	Competitors will not be penalized for exceeding acceleration gradient limits to avoid dynamic objects.
DC.x.4.4	Dynamic Challenge	(Each Segment of 10 total)	Peak Longitudinal Deceleration Gradient	+1 pts for staying above -10 m/s <sup>3</sup>	1	0	1	1	Competitors will not be penalized for exceeding deceleration gradient limits to avoid dynamic objects.
DC.x.4.5	Dynamic Challenge	(Each Segment of 10 total)	Peak Lateral Acceleration	+1 pts for staying within ±3.5 m/s <sup>2</sup>	1	0	1	1	Competitors will not be penalized for exceeding lateral acceleration limits to avoid dynamic objects.
DC.x.4.6	Dynamic Challenge	(Each Segment of 10 total)	Avoiding Unnecessary Stops	Vehicle must not stop at any time between the start address and destination address unless required by a traffic control device or dynamic object.	3	0	1	3	
DC.x.DNF2	Dynamic Challenge	(Each Segment of 10 total)	Off Course	Occurs when the vehicle has all four (4) tires outside the course boundary, as indicated by a solid white line, yellow line, or pavement edge.	0	-60	1		DNF - All points in this segment obtained after the DNF occurs will be forfeited.
DC.x.DNF3	Dynamic Challenge	(Each Segment of 10 total)	Manual Takeover	Occurs as a result of any manual takeover or E-stop activation while on-course.	0	-60	1		DNF - All points in this segment obtained after the DNF occurs will be forfeited.
DC.x.DNF4	Dynamic Challenge	(Each Segment of 10 total)	Collision	Occurs when the vehicle collides with any object or drives on top of a curb.	0	-60	1		DNF - All points in this segment obtained after the DNF occurs will be forfeited.
DC.x.DNF5	Dynamic Challenge	(Each Segment of 10 total)	Exceeding Autonomous Vehicle Speed Limit	Occurs when the vehicle under autonomous control exceeds the autonomous vehicle speed limit (25mph)	0	-60	1		Collisions may prevent a vehicle from attempting additional segments for the day. DNF - All points in this segment obtained after the DNF occurs will be forfeited.
	Dynamic Challenge	Total (Per Segment):				60			Competitors may go up to 35mph when the vehicle is being driven manually.
	Dynamic Challenge	*	Tie Breaking	1. Highest number of segments completed 2. Fastest cumulative route time					