

Engineering Communication: Engineering Evaluation

1 0 = Yes (1) or No (0) 2 1 0 = 2: Excellent, 1: Good, 0: Poor or missing

Teamwork/Presentation 15 pts max

The team was prepared for the presentation	1 0
The presentation was thought through, organized, and articulate	1 0
The presentation covered design and building process	1 0
The presentation addressed possible safety issues	2 1 0
The presentation highlighted design innovations/creative ideas	2 1 0
The team demonstrates an understanding of the ROV systems and operation	2 1 0
Each member understands its systems and operations	2 1 0
Team members exemplify teamwork and ideals for working together	2 1 0
Team members demonstrated they encountered challenges with determination and resolve as well as with a sense of humor	2 1 0

Overall design and Workmanship 12 pts max

Ready for the water	1 0
Been tested prior to the event	1 0
Passes the safety inspection (team has inspection card)	1 0
Meets the competition safety requirements	1 0
Displays warning labels and safeguards	1 0
Made of non-corrosive materials	1 0
Cannot release hazardous waste into the pool	1 0
Systems well laid out	1 0
Components easy to access for maintenance & troubleshooting	2 1 0
Built within the imposed design and safety constraints	1 0
Built to accomplish mission	1 0

Systems Design and Operation

Overall Vehicle System 7 pts max

Team built the systems "from scratch" or using individual commercial components. (<i>Score this item by adding one point for each sub-system built in this manner</i>)	7 6 5 4 3 2 1
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Control and Electrical System 7 pts max

Control System is thought through and designed logically	1 0
Components logically and neatly incorporated	1 0
Fuse(s) in place on the positive side	1 0
Computer or Manual Controllers (Score one set)	
<u>Computer</u> - software code is thought thru	1 0
- designed by students	1 0
- team has a good command of s/w flow	1 0
- the system is operational	1 0

	OR
<u>Manual</u>	
- switches laid out intuitively	1 0
- switches are clearly labeled	1 0
- students are able to manipulate switches easily?	1 0
- the system is operational	1 0
Propulsion	5 pts max
Thrusters are securely attached	1 0
Thrusters do no obstruct water flow	1 0
Thrusters are waterproofed and protected	1 0
Appropriate number of thrusters to accomplish mission	1 0
Appropriate size of thrusters to accomplish mission	1 0
Buoyancy and Ballast	3 pts max
Vehicle has buoyancy/ballast system	1 0
System takes stability in to account	1 0
System takes missions into account	1 0
Sensors	7 pts max
Camera Present	1 0
Camera is waterproofed	1 0
No obstructions to camera's view	1 0
Sensors demonstrate creativity and application of knowledge and skills	2 1 0
Other sensors present (<i>1 pt for each up to 2 pts</i>)	2 1 0
Payload Tools	8 pts max
Payload tools are appropriate for accomplishing mission	2 1 0
Payload tools incorporate unique features	2 1 0
Single payload tool has multiple uses	2 1 0
Payload tools demonstrate creativity and application of knowledge and skills	2 1 0
Tether	4 pts max
Tether is securely attached to ROV	1 0
Tether is neatly bundled and protected	1 0
Tether is easy to handle	1 0
Team develop tether management protocol	1 0
Originality	10 pts max
Contains original concepts and unique designs in vehicle	1 0
Safety is increased with design innovations	2 1 0
Cost is decreased with design modifications	2 1 0
Functionality is increased with design or modifications	2 1 0
Team completed actual construction of ROV	1 0
Team design and completed electrical system	1 0
Team developed software for ROV	1 0

Budget

Project stayed on Budget

2 pts max

1 0

Companies, individuals who contributed funds or equipment are
acknowledged

1 0

Engineering Evaluation Score:**Discretionary Points**

Bonus points for a job well done

3 pts max

3 2 1

Penalty Points

Mentor, instructor, etc. exercised more than advisory role

-5 pts max

-3 -2 -1

Overuse of commercial, off-the-shelf systems

-2 -1

Engineering Evaluation Total Score: