

Part #3: Robot Design Overview



The Robot Design session allows teams to show off the **DESIGN** of their robot

Teams do **NOT** operate their robot. There is no FLL table in the room

Teams should:

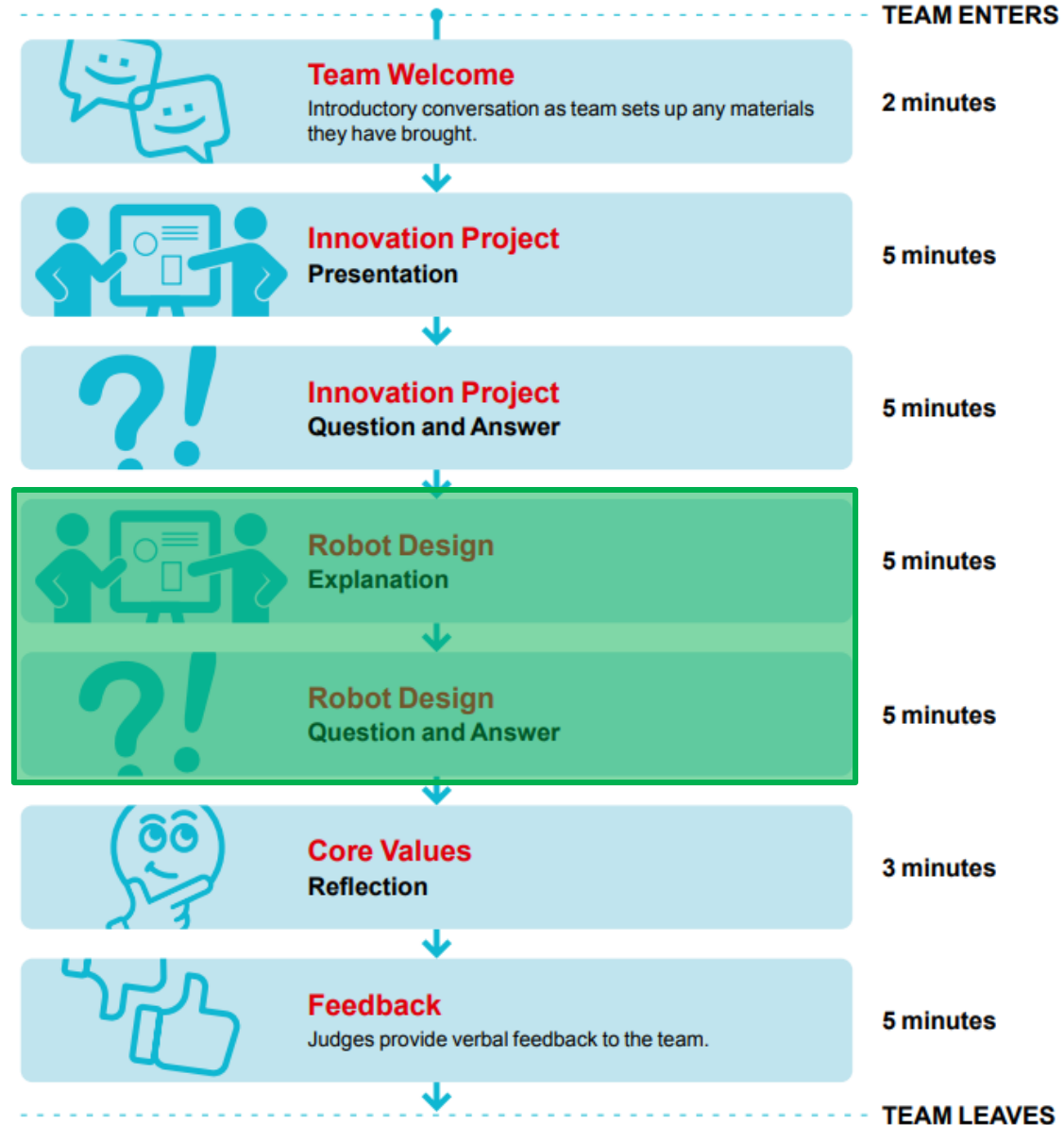
Explain: The development process, team roles, strategy...

Describe: Show code, display documentation...

Demonstrate: Robot Functions, How attachments move and operate...

Answer Questions: The judges will ask for more information...

Coaches **MAY** be welcome to observe, but cannot speak, help, or participate in **ANY** way.





Categories

Robot Design

Team #	Team Name	Judging Room
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Instructions

Teams should communicate to the judges their achievement in each of the criteria below. This rubric should be filled out during the Robot Design explanation.

Judges are required to tick one box on each separate line to indicate the level the team has achieved. If the team exceeds, please make a short comment in the Exceeds box.

BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4
IDENTIFY - Team had a clearly defined mission strategy and explored building and coding skills they needed.			
<input type="checkbox"/> No clear mission strategy	<input type="checkbox"/> Partially clear mission strategy	<input type="checkbox"/> Fully clear mission strategy	<input type="checkbox"/>
<input type="checkbox"/> Some team members learned building and coding skills	<input type="checkbox"/> Many team members learned building and coding skills	<input type="checkbox"/> All team members learned building and coding skills	<input type="checkbox"/>
DESIGN - Team produced innovative designs and a clear workplan, seeking guidance as needed.			
<input type="checkbox"/> Minimal evidence of an effective workplan	<input type="checkbox"/> Some evidence of an effective workplan	<input type="checkbox"/> A lot of evidence of an effective workplan	<input type="checkbox"/>
<input type="checkbox"/> Minimal explanation of robot and code's innovative features	<input type="checkbox"/> Some explanation of robot and code's innovative features	<input type="checkbox"/> A lot of explanation of robot and code's innovative features	<input type="checkbox"/>
CREATE - Team developed an effective robot and code solution matching their mission strategy.			
<input type="checkbox"/> Limited functionality of robot attachments or sensors	<input type="checkbox"/> Developing functionality of robot attachments or sensors	<input type="checkbox"/> Good functionality of robot attachments or sensors	<input type="checkbox"/>
<input type="checkbox"/> Unclear explanation of how code makes their robot act	<input type="checkbox"/> Partially clear explanation of how code makes their robot act	<input type="checkbox"/> Fully clear explanation of how code makes their robot act	<input type="checkbox"/>
ITERATE - Team repeatedly tested their robot and code to identify areas for improvement and incorporated the findings into their current solution.			
<input type="checkbox"/> Minimal evidence of testing their robot and code	<input type="checkbox"/> Some evidence of testing their robot and code	<input type="checkbox"/> A lot of evidence of testing their robot and code	<input type="checkbox"/>
<input type="checkbox"/> Minimal evidence their robot and code was improved	<input type="checkbox"/> Some evidence their robot and code was improved	<input type="checkbox"/> A lot of evidence their robot and code was improved	<input type="checkbox"/>
COMMUNICATE - Team's explanation of the robot design process was effective and showed how all team members have been involved.			
<input type="checkbox"/> Unclear explanation of robot design process	<input type="checkbox"/> Partially clear explanation of robot design process	<input type="checkbox"/> Fully clear explanation of robot design process	<input type="checkbox"/>
<input type="checkbox"/> Clear evidence that many team members involved	<input type="checkbox"/> Clear evidence that many team members involved	<input type="checkbox"/> Clear evidence that all team members involved	<input type="checkbox"/>

Ratings

Comments

Great Job:	Feedback Comments	Think about:
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Robot Design: Identify

BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4	
			<i>How has the team exceeded?</i>	
IDENTIFY – Team had a clearly defined mission strategy and explored building and coding skills they needed.				
<input type="checkbox"/> Unclear mission strategy	<input type="checkbox"/> Partially clear mission strategy	<input type="checkbox"/> Clear mission strategy	<input type="checkbox"/>	
<input type="checkbox"/> Limited evidence of building and coding skills in all team members	<input type="checkbox"/> Inconsistent evidence of building and coding skills in all team members	<input type="checkbox"/> Consistent evidence of building and coding skills in all team members	<input type="checkbox"/>	

Strategy: Explain a “**Clear** Mission Strategy”

Learning: **All** team members learn to code and build

Robot Design: Design

BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4
			<i>How has the team exceeded?</i>
DESIGN – Team produced innovative designs and a clear workplan, seeking guidance as needed.			
<input type="checkbox"/> Minimal evidence of an effective plan	<input type="checkbox"/> Partial evidence of an effective plan	<input type="checkbox"/> Clear evidence of an effective plan	<input type="checkbox"/>
<input type="checkbox"/> Minimal explanation of robot and code's innovative features	<input type="checkbox"/> Partial explanation of robot and code's innovative features	<input type="checkbox"/> Clear explanation of robot and code's innovative features	<input type="checkbox"/>

Workplan: Provide **clear** evidence of **effective** plan.

Innovation: **Clearly** explain **innovative** features in code and build.

Robot Design: Create

BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4
			<i>How has the team exceeded?</i>
CREATE – Team developed an effective robot and code solution matching their mission strategy.			
<input type="checkbox"/> Limited explanation of their robot and its attachment and sensor functionality	<input type="checkbox"/> Simple explanation of their robot and its attachment and sensor functionality	<input type="checkbox"/> Detailed explanation of their robot and its attachment and sensor functionality	<input type="checkbox"/>
<input type="checkbox"/> Unclear explanation of how code makes their robot act	<input type="checkbox"/> Partially clear explanation of how code makes their robot act	<input type="checkbox"/> Clear explanation of how code makes their robot act	<input type="checkbox"/>

Functionality: **Detailed** explanation of sensor capabilities and mechanical function for robot and attachments.

Programming: **Clearly** explain your programming and how it makes the robot behave.

Robot Design: Iterate

BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4	
			<i>How has the team exceeded?</i>	
ITERATE – Team repeatedly tested their robot and code to identify areas for improvement and incorporated the findings into their current solution.				
<input type="checkbox"/> Minimal evidence of testing their robot and code	<input type="checkbox"/> Partial evidence of testing their robot and code	<input type="checkbox"/> Clear evidence of testing their robot and code	<input type="checkbox"/>	
<input type="checkbox"/> Minimal evidence their robot and code was improved	<input type="checkbox"/> Partial evidence their robot and code was improved	<input type="checkbox"/> Clear evidence their robot and code was improved	<input type="checkbox"/>	

Logging: Keep a “change log” of testing and improvements.

Provide **clear** evidence of results and improvement.

Part 5: Communicate

BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4
			<i>How has the team exceeded?</i>
COMMUNICATE – Team's explanation of the robot design process was effective and showed how all team members have been involved.			
<input type="checkbox"/> Unclear explanation of robot design process	<input type="checkbox"/> Partially clear explanation of robot design process	<input type="checkbox"/> Clear explanation of robot design process	<input type="checkbox"/>
<input type="checkbox"/> Minimal evidence that all team members were involved	<input type="checkbox"/> Partial evidence that all team members were involved	<input type="checkbox"/> Clear evidence that all team members were involved	<input type="checkbox"/>

Describe all this to the Judges...

Design Process: Give a **CLEAR** definition of the design process.

Teamwork: Show how **ALL** team members were involved.

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Robot Design Executive Summary (RDES)

The RDES is a template to help teams explain the robot to Judges.

It is **NOT** a requirement for Australian Competition

However, the RDES is a very useful tool for getting teams through the Robot Design Session.

All teams have to do is read from a piece of paper. There is no need to memorise anything, or put on any kind of show!

Note: Remember the time limit!



Suggested RDES Outline:

Robot Facts

Design (Fun)

Design (Strategy)

Design (Process)

Design (Mechanical)

Design (Programming)

Design (Innovation)

Demonstrate!

Important: There is no need to describe every detail. Focus on highlights!

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Contents

Identify	4
Teaching and Learning – Balancing the Team	5
Strategy	6
Run #1 Outline	7
Run #2 Outline	7
Run #3 Outline	8
Run #4 Outline	8

Robot Design: Documentation (See Engineering Notebook)

Robot Design Documentation

(Spend some extra time on this one)

- Team Name/Logo
- Robot Design Summary (use pictures)
- Robot Development Process (Pictures or Text)
- Code (Print Summary)
- Innovations
- Challenges/Lessons

Engineering Notebook provides a template



Contents

Robot Design - Summary.....	5
Robot Design Executive Summary.....	6
Mechanical Design – Robot Summary.....	8
Robot Summary: Core Robot.....	9
Robot Summary: Zone 1.....	10
Robot Summary: Zone 2.....	11
Robot Summary: Zone 3.....	12
Robot Summary: Zone 4.....	13
Robot Archive: Zone 1 (Version 1).....	14
Strategy and Innovation – Design Process.....	16
Robot Design Process.....	17
Robot Classification System.....	18
Teaching and Learning – Balancing the Team.....	19
Performance Analysis – Issues and Enhancements.....	20
Robot Design Diary.....	23
Strategy and Innovation – Pseudocode.....	40
Pseudocode.....	41
Strategy and Innovation – Mission Strategy.....	43
Strategy.....	44
Zone #1 Outline.....	45
Zone #2 Outline.....	45
Zone #3 Outline.....	46
Zone #4 Outline.....	46
Strategy and Innovation – Innovation.....	47
Intelligent Robots: Error Handling and Autonomous Decisions.....	48
Two-Way Touch Sensor.....	49
Two-Way Ratchet Gearbox.....	50
PID Line Follower.....	51
Gyro Drive.....	52
Versatility.....	53
Master Code.....	54
The FLL Ruler.....	55
Slow-Motion Replay.....	56
Mission Sequencer Side-Effects.....	57



Unofficial Rules of FLL – Robot Game.....	58
Programming – Code Management.....	61
Code Protection and Organisation.....	61
Code Classification.....	62
Source Control.....	62
Naming Conventions.....	62
Icon Conventions.....	62
Program Logs.....	64
Programming – Code Outline.....	65
Program Classification.....	66
Global Variables.....	67
Programming Techniques: Multi-Thread Loop Control.....	68
Programming Techniques: Loop Control by Count.....	69
Programming – Code Library.....	70
Reusable Code.....	71
FLL_Stop.....	71
FLL_GyroHardReset.....	71
FLL_PortCombine.....	72
FLL_SetLightDark.....	72
FLL_MotorMemoryReset.....	73
FLL_GyroPointTurn.....	74
FLL_PGyroFollow.....	76
FLL_DriveToTouchErr.....	77
FLL_DTTE_Init.....	78
FLL_DTTE_Correction.....	79
FLL_DTTE_WaitForConditions.....	80
FLL_DTTE_Movement.....	81
FLL_MotorAlign.....	82
FLL_PIDLine.....	83
FLL_PID_Init.....	84
FLL_PID_Proportional.....	84
Mission Code: Zone #1.....	88
IO_Z1.....	88
IO_Z1_BaseToStation.....	88
IO_Z1_ActionsAndReturn.....	89
Mission Code: Zone #2.....	90
IO_Z2.....	90



IO_Z2_BaseToRamp.....	90
IO_Z2_Actions.....	91
IO_Z2_RackExtend.....	92
IO_Z2_RampToBase.....	93
Mission Code: Zone #3.....	94
IO_Z3.....	94
IO_Z3_HubLine.....	94
IO_Z3_HubLineToNWall.....	95
IO_Z3_WallToExercise.....	97
IO_Z3_ExerciseCalc.....	97
IO_Z3_ReturnToBase.....	97
IO_Z3_ExerciseTimer.....	98
IO_Z3_ExerciseStallCheck.....	99
IO_Z3_Exercise.....	100
Mission Code: Zone #4.....	101
IO_Z4.....	101
IO_Z4_FoodLab.....	103
IO_Z4_FoodLabToNWall.....	103
IO_Z4_LanderAlignment.....	103
IO_Z4_Lander.....	104
Mission Sequencer.....	105
IOmc_EndMissions.....	105
FLLmc_TimeOutput.....	105
IOmc_MissionAdjust.....	105
IOmc_MasterEndGame.....	106
FLLmc_MasterDisplay.....	107
FLLmc_Buttons.....	108
FLLmc_TimeCalc.....	109
FLLmc_SecondCalc.....	110
FLLmc_EndgameUpdate.....	111
HDmc_Init.....	112
FLLmc_ProgramAlert.....	113
IOmc_MissionSelect.....	114

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