Team # _____   Team Name _____

Basic Engineering Notebook Requirements

Maximum 2 Notebooks	No	Yes		
Team #/Name on Cover	No	Yes		
Summary Page	No	Team narrative & list of season highlights	Also includes list of key pages for judges consideration	Also organizes key pages by topic or relevance to award
Team Section	No	Yes		
Engineering Section	No	Yes		
Business Plan Section	No	Yes		
Strategic Plan Section	No	Yes		
Sustainability Plan Section	No	Yes		
Other Sections	No	Yes Specify:		

Control Award

Control Award Content Sheet Submitted	No	Yes

Think Award: Notes:

Criteria	Beginning	Developing	Accomplished	Exemplary
Engineering	No mathematics/physics engineering diagrams or strategy in notebook	Basic engineering diagrams without accompanying calculations	Diagrams AND engineering calculations (e.g. force, velocity, torque, stress, friction, etc.)	Advanced engineering calculations (e.g. calculus) AND/OR multiple examples of engineering calculations
Design Process	No documentary evidence of team's engineering process	Clear evidence of engineering process (i.e. multiple versions of a design with testing results)	Explicit description of team's engineering process with clear evidence of its practice	Also explicit discussion of process improvement over time
Team Journey	No documentary evidence of team's journey over season	Clear evidence of team's journey (i.e. meeting logs with reflections, lessons learned, etc.)	Also narrative explicitly describing the team's evolution	Also explicit team self-reflection on their journey with identified further team development goals
Summary Page	No Summary page in Notebook	Summary page with 6-8 references to key pages in Engineering Section		
Notebook Organization	No clear organization of notebook	Notebook clearly organized	Meets most Basic Engineering Notebook Requirements	Meets ALL Basic Engineering Notebook Requirements

Connect Award: Notes:

Prompts: "How have you used professional engineers/scientists to help your team?" "How have you promoted understanding of FIRST beyond your team?"

Criteria	Beginning	Developing	Accomplished	Exemplary
Business/Strategic Plan (Notebook)	No documented plan	Identifies one or more goals (e.g. fundraising, outreach, community service, etc.) and steps/plans to reach goals	Identifies multiple goals with clear success metrics and well thought-out plans/steps to reach them.	Also tracks performance against plan and is self-reflective
Engineering/Science Community Utilization	No attempt to utilize professionals as mentors	All professionals are "on-team" volunteers (e.g. coaches, mentors, parents, etc.)	Clear and effective utilization of at least one "off-team" professional.	Clear and effective utilization of multiple "off-team" professionals from multiple organizations and/or disciplines
FIRST Promotion *with Engineering Professionals*	No outreach efforts	Promotion efforts limited to "on-team" individuals and in-school/organization.	Specific efforts to promote understanding of FIRST beyond team's school/organization	Also, multiple efforts with larger scale impact that has been measured in some way
Communication Skills	No explicit mention	Team discusses how individuals and the team have grown in their ability to communicate effectively within the team and with others		

Motivate Award: Notes:

Prompts: "How do you build your team, ensure all team members are rewarded by the experience, and promote FIRST?"

Criteria	Beginning	Developing	Accomplished	Exemplary
Business/Strategic Plan (Notebook)	No documented plan	Identifies one or more goals (e.g. fundraising, outreach, community service, etc.) and steps/plans to reach goals	Identifies multiple goals with clear success metrics and well thought-out plans/steps to reach them.	Also tracks performance against plan and is self-reflective
FIRST Promotion	No outreach efforts	Limited to "on-team" individuals and in-school/organization.	Efforts beyond team's school/organization	Also, multiple efforts with measured, larger scale impact
Recruitment	No explicit recruitment efforts	Specific recruitment efforts of new team members	Also recruitment efforts of new coaches/mentors	Efforts beyond team to establish new teams
Team Work	Not clear all team members have contributed to the season	Apparent that most/all team members have materially contributed to the season.	Team can describe contributions of each member	Team can describe the process by which team members take on roles/work
Presentation	Most do not participate or are missing	Most but not all team members contribute to presentation	All team members contribute in one way or another	Thoughtful presentation utilizing all team members and covering all relevant areas
Materials/Booth	No presentation materials	Basic presentation materials at booth (e.g. poster board)	Creative presentation materials used in pit and with judges to promote team and tell the team's story	Relatively unique and high-impact materials used in pit to promote team and tell the team's story

Team # _____   Team Name _____

Rockwell Collins Innovate Award: Notes:

Prompts: "Please explain your most useful innovation, how you arrived at its design, and how well it performs."

Criteria	Beginning	Developing	Accomplished	Exemplary
Design Process (Notebook)	No documented process for arriving at design of identified innovation	Clear evidence of engineering process for the identified innovation (i.e. multiple versions of a design with testing results)	Also clear identification of one or more performance criteria that drove the process	Clear identification of multiple performance criteria with measurements at multiple stages of the process
Elegant & Unique	Identified innovation not particularly unique	Identified innovation is relatively unique (may be other similar examples within the meet)	Also identified innovation demonstrates elegance in some way (e.g. highly effective material choice, solid balance of multiple design criteria, etc.)	Particularly unique and elegant design that is rare within the league/region and solves an important problem for the team strategy
Reliability	Identified innovation not reliable as evidenced by team testimony or match observation	Partially reliable innovation as evidenced by team testimony or match observation	Highly reliable innovation as evidenced by team testimony or match observation	Also reliability/consistency data measured and recorded
Efficiency	Identified innovation has no or weak alignment with team robot strategy	Identified innovation aligned with strategy but not currently utilized in match performance	Identified innovation aligned with strategy and used effectively in match performance	Also gives team a clear competitive edge in match performance.

PTC (Industrial) Design Award: Notes:

Prompts: "Did you design your robot to make it easier to work on, use or to achieve a particular look? If so, how?"

Criteria	Beginning	Developing	Accomplished	Exemplary
Detailed Drawings (Notebook)	No drawings of robot or design elements	Notebook contains drawings of robot aspects identified by the team as incorporating principles of industrial design	Also, drawings are detailed and clear	Also, drawings indicate key industrial design considerations and the team's motivation for their use
Balanced Form, Function, and Aesthetics	No consideration of Industrial design	Industrial design aspects out of balance with function (e.g. may impede function).	Good balance of form/function/aesthetics. Aspects are not compromised by other aspects.	Excellent balance of form/function/aesthetics where aspects are strengthened by each other.
Differentiation	Robot is not differentiated from others.	Industrial design elements provide some differentiation from some other robots, but exhibit strong similarities to other robots as well.	Industrial design elements provide significant differentiation from most other robots	Industrial design elements are unique and striking
Design Basis/Goal	No consideration of Industrial design	Goal/Basis for industrial design is clear.	Multiple goals for the design are articulated and prioritized against each other to allow for a balanced solution	
PTC Creo Software	Not Used	Used		

Control Award: Notes:

Prompts: "How did you use sensors, software, etc. to make your robot smarter, either in the autonomous period or by aiding the driver?"

Control Award Content Sheet Submitted	No	Yes

Criteria	Beginning	Developing	Accomplished	Exemplary
Documented Control Components (Notebook)	No documentation in engineering notebook regarding identified control components	Control components identified in the engineering notebook	Also evidence of process that arrived at final design	Also explicitly documented process detailing various experiments and results leading to final design
Effectiveness	Control components do not function in match play	Control components function but do not enhance the robot performance in match play	Control components function and enhance the robot performance in match play	Also, control components give a clear competitive edge in match play
Software	Control software is based on simple odometry (move x inches, rotate y degrees, etc.)	Control software incorporates and uses sensor input beyond motor encoders	Control software can adjust to random/chaotic conditions in the playing field (i.e. location of movable objects)	Highly advanced algorithms for failure detection, retry, etc. Ability to control the robot through an extended sequence of operations over a longer period of time
Reliability	Control components not reliable as evidenced by team testimony or match observation	Partially reliable as evidenced by team testimony or match observation	Highly reliable as evidenced by team testimony or match observation	Also reliability/consistency data measured and recorded

Robot/Team Observations: