

2013 - 2014 Research and Development Rubric Check Off List

CATEGORY	Student Expectation Check Off List (0-100% of points)
DEFINING THE PROBLEM	<ul style="list-style-type: none"> <input type="checkbox"/> A lengthy CLEAR DESCRIPTION where <input type="checkbox"/> DESIGN SPECIFICATIONS and <input type="checkbox"/> CONSTRAINTS are offered. <input type="checkbox"/> RESEARCH and <input type="checkbox"/> SUPPORTING DOCUMENTATION shows an overwhelming need that the problem should be pursued by development.
RESEARCH, BRAINSTORMING, AND DEVELOPING IDEAS	<ul style="list-style-type: none"> <input type="checkbox"/> Many NEW IDEAS are generated as an outcome of <input type="checkbox"/> BRAINSTORMING and <input type="checkbox"/> RESEARCH. <input type="checkbox"/> SUGGESTIONS and <input type="checkbox"/> DETAILS are given for <input type="checkbox"/> DESIGN CONSTRAINTS of the product and for manufacturing.
CONCEPTUAL DESIGN AND SKETCHING	<ul style="list-style-type: none"> <input type="checkbox"/> MULTIPLE THUMBNAIL DRAWINGS are offered (at least 5). Additionally, accurate <input type="checkbox"/> ORTHOGRAPHIC and <input type="checkbox"/> ISOMETRIC views are <input type="checkbox"/> DRAWN TO PROPORTION for communicating the design for <input type="checkbox"/> A REVIEW. <input type="checkbox"/> DESIGN SPECIFICATIONS and <input type="checkbox"/> ANNOTATIONS are clearly noted on the sketches. <input type="checkbox"/> CONSTRAINTS are also considered and noted.

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DEVELOPING THE DESIGN	<p>Presents</p> <ul style="list-style-type: none"> <input type="checkbox"/> A SET OF PRODUCTION DRAWINGS with an <input type="checkbox"/> ASSEMBLY and <input type="checkbox"/> WORKING DRAWINGS. Each multiview drawing (including orthographic) includes a <input type="checkbox"/> 3D REPRESENTATION with accurate <input type="checkbox"/> ANNOTATIONS, <input type="checkbox"/> NOTATIONS, <input type="checkbox"/> BLOCKS, <input type="checkbox"/> DIMENSIONING, and <input type="checkbox"/> TOLERANCING as well.
MAKING A MODEL OR PROTOTYPE	<ul style="list-style-type: none"> <input type="checkbox"/> ACCURATE and <input type="checkbox"/> PROPORTIONALLY MODELED according to <input type="checkbox"/> DESIGN SPECIFICATIONS, <input type="checkbox"/> INDUSTRY STANDARDS, <input type="checkbox"/> CONSTRAINTS, <input type="checkbox"/> DIMENSIONS, and <input type="checkbox"/> SKETCHES.
ENGINEERING TESTING AND EVALUATING THE DESIGN	<p>Design and model accurately</p> <ul style="list-style-type: none"> <input type="checkbox"/> REPRESENT EACH OTHER <input type="checkbox"/> FOLLOWING INDUSTRY STANDARDS. Testing or evaluation of designs/models <input type="checkbox"/> INDICATE REVISIONS if necessary through <input type="checkbox"/> CHECKS AND APPROVALS.

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REVISING THE DESIGN	<p>Production drawings are</p> <ul style="list-style-type: none"> <input type="checkbox"/> CHANGED ACCORDING TO TESTING AND CHECK RESULTS if needed. <input type="checkbox"/> REVISION BLOCKS ARE NOTED and <input type="checkbox"/> APPROVAL/CHECKING/TESTING CONTINUES until <input type="checkbox"/> PLANS HAVE FINAL APPROVAL.
CREATING A FINAL MODEL, PROTOTYPE, OR MOCKUP	<p>An accurate example of a manufactured</p> <ul style="list-style-type: none"> <input type="checkbox"/> MODEL OR MOCKUP OF THE MODEL IS CREATED according to final approved production drawings. Accurate <input type="checkbox"/> DESIGN SPECIFICATIONS, MATERIALS, <input type="checkbox"/> and CONSTRAINTS are followed and implemented in developing the example.
PRESENTATION	<ul style="list-style-type: none"> <input type="checkbox"/> AN ORAL PROFESSIONAL PROPOSAL given, including: <input type="checkbox"/> WRITTEN PROPOSAL WITH SUPPORT DOCUMENTATION <input type="checkbox"/> CONCEPTUAL DESIGNS <input type="checkbox"/> PRODUCTION DRAWINGS <input type="checkbox"/> PROTOTYPE OR MOCKUP <input type="checkbox"/> TESTING AND EVALUATION RESULTS <input type="checkbox"/> OUTLINE OR SLIDES OF PRESENTATION GIVEN <input type="checkbox"/> GOOD PUBLIC SPEAKING <input type="checkbox"/> PROFESSIONAL PRESENCE