

SECTION A. COURSE DESCRIPTION COVER PAGE

Date Received:

(Educational Services Office use only)

1. Course Title: Engineering 7/8	6. Prerequisite(s): N/A
2. Action: ___ New Course __x_ Course Revision ___ Title Change Only	7. Grade Level: 7/8
3. Transcript Title/Abbreviation: (For Educational Services)	8. Elective/Required: Elective: Part of a 7/8 Science/Engineering trimester wheel
4. Transcript Course Code/Course Number: (For Educational Services)	9. Subject Area: Science
5. CBEDS Code: (For Educational Services)	10. Department: Science
11. Length /Credits: Trimester ___ 0.5 (half year or semester equivalent) ___ 1.0 (one year equivalent) ___ 2.0 (two year equivalent) _x_ Component of wheel	
12. Was this course previously approved by UC? ___ Yes __x_ No If so, year removed from list: _____	
13. Meets the "_____" requirements in the a-g university/college entrance requirement. Approval date: _____	
14. School Contact Information Name: ___Michael Hans___ Title/Position: ___Principal___ Phone: ___510-748-4018___ Fax: _____ E-Mail: ___mhans@alameda.k12.ca.us___	
16. Signatures: Department Chair: _____ Principal: <u>Michael Hans</u> Acknowledged by Other Principals: <u>Carmine Hans</u> <u>[Signature]</u> Educational Services: <u>[Signature]</u> <u>[Signature]</u>	
16. Superintendent signature: _____ Date Approved by Board of Education: _____	

SECTION B. COURSE CONTENT

17. **Course Description:** This trimester course is a project based elective with the introduction of engineering principles. Students learn about the basic elements of design and construction. Students will investigate how things work and how they are designed. Emphasis will be on scale, measurement, blueprinting, structures, energy, forces, flight and inventions.
18. **Course Goals and/or Major Student Outcomes:** The goal is to make a revision to the current Explor Engineering 6 course. This would allow 7th and 8th graders to take a trimester long engineering classes. This class would go into more depth than the 6 week exploration class. This class would serve as one of three classes on the Science/Engineering trimester wheel.
19. **Course Objectives (standards):** Same as the Explor Engineering 6 class. The focus of the class will be an introduction to engineering principals through the creation of model building. The skills of designing, measuring, building and problem solving will be repeatedly practiced. Examples of some student projects include large scale models and bridge construction.
20. **Course Outline:** Modified from the exploratory 6th grade class since it will be 6 weeks longer. Units will focus on the engineering principals, the creation of Straw Bridges, Straw Towers, Straw Rockets and the creation of 10x enlarged 3D Scale models of everyday objects.
21. **Instructional Materials:** Current Foss kits are used and the use of minor construction supplies like straws
Board approved required text: N/A
Supplementary materials: N/A
22. **Instructional Methods and/or Strategies:** Almost completely project based. There will be a minimal amount of homework in this elective. Students might have an assignment to “think” or “find” but extensive homework is not to be expected.
23. **Assessment and Evaluation:** Assessment is given from evaluating energetic class participation, individual involvement, and successful finished projects that are both individual and group based.
24. **Grading Policy:** Student grades will consist of the following three categories: class participation, class work and hands-on activities. The grading system used is based on total points. The points that the students earn on assignments are divided by the total points possible in the class. The result is multiplied by 100 for a percentage score.
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|-----------------|----|-----------------|----|-----------------|----|----------------|----|----------------|----|
| 93% or higher | A | 90.0 % to 92.9% | A- | 87.0 % to 89.9% | B+ | 83.0% to 86.9% | B | 80.0% to 82.9% | B- |
| 77.0 % to 79.9% | C+ | 73.0% to 76.9% | C | 70.0% to 72.9% | C- | 67.0% to 69.9% | D+ | 63.0% to 66.9% | D |
| 60.0% to 62.9% | D- | 59.9% or below | F | | | | | | |

SECTION C. OPTIONAL INFORMATION

25. Context for offering the course: We want to offer a STEM Wheel for our 7th and 8th graders. This Engineering class would be a perfect complement to our Environmental Science and our Woodshop classes. Our students love the construction element of this course. They love testing their designs and the hands on aspect of this class really engages some of our students who have a difficult time in their academic classes. Students would be given the opportunity to apply both Math and Science concepts into physical applications.
26. History of Course Description: For the past decade we have had various Engineering classes for both our 7th and 8th graders and also as a part of our 6th grade wheel. These classes have always been labeled "Exploratory" and this is our attempt to match a course title with the actual class. -