



THETA TAU

PROFESSIONAL ENGINEERING FRATERNITY

Website: <http://davisthetatau.org/rubegoldberg/>

Omicron Gamma OF

The University of California, Davis

THETA TAU RUBE GOLDBERG MACHINE CONTEST 2012

Dear Students and Organizations:

Theta Tau Coed Professional Engineering Fraternity of the University of California at Davis welcomes you to the Rube Goldberg Machine Contest at UC Davis.

The Rube Goldberg Machine Contest is based on the cartoons of the famed Ruben Luscious Goldberg, who took simple tasks and made them into excessively complicated machines. Inspired by this cartoonist, college students nationwide compete to design a machine that uses the most complex process to complete a simple task i.e. put a stamp on an envelope, screw in a light bulb, make a cup of coffee - in 15 or more steps.

Theta Tau challenges you and your friends to build your very own Rube Machine to compete in UC Davis's annual Rube Goldberg Machine Contest. Working on a Rube Machine is provides you a great opportunity to get your hands dirty with some real engineering and design.

The University of California – Davis Rube Goldberg contest is tentatively scheduled for Picnic Day (**Saturday, April 21st**).

Each team must submit an entry form and a list of its members along with their major and year in school. High School students can skip the major column and indicate their class standing. There is also a deposit of \$50 for each team, which will be refunded in full when the team competes on Picnic Day. This deposit is to ensure that teams will not drop out of the competition in the last minute. The entry form can be found at: <http://davisthetatau.org/>

The deadline to register for the Rube Goldberg competition is **March 24st**. Please submit your entry form to Fred Padron and Son Bui at RubeGoldberg@davisthetatau.org.

Please feel free to contact the Rube Goldberg coordinators at (408) 242-0357 if you have any further questions or concerns.

Good luck,

Fred Padron

Rube Goldberg Co-Chair, Theta Tau Professional Engineering Fraternity



Important Dates:

Registration Deadline: March 24, 2012

Competition Date: April 21, 2012

Contact Information:

Fred Padron

Cell: (408) 242-0357

E-mail: frederixpadr@yahoo.com

Task:

Pop a Balloon.

Machine Specifications:

- The machine must complete the task as described by the Chairman.
- The machine must be no larger than 6 ft. x 6 ft. x 6 ft. either the 6 ft. or the 6 ft. dimension may be considered the “front” of the machine.
- The machine must have a minimum of twenty (15) steps.
- Teams are encourage to build on the annual **Rube Goldberg Theme: Life is a Circus**
- Teams are encouraged to be creative and complex with their machines, this is emphasizing the spirit of Rube Goldberg.
- There is no maximum number of steps.
- The machine must run for no less than one (1) minute and thirty (30) seconds.
- No corporate logos or names may be displayed on the machine.
- No live animals may be used in the machine.
- The machine must not imply profane, indecent or lewd expressions.
- Any loose or flying objects must remain within the set boundaries of the machine. This includes, but is not limited to, drops of water, **slivers of balloon**, and other “small” objects.
Steam and other gasses are exempt from this rule.
- No flames may be used on the machine.
- No hazardous materials or explosives can be used on the machine.
- The machine must be safe to the satisfaction of the RGMC officials. The contest Chairman must approve any questionable items prior to the competition.
- Any destructive action against another machine is grounds for disqualification.

Team Restrictions:

- Each team must have a minimum of two (2) members.
- There is no limit on the number of members a team may have, however, the number of people allowed on stage once the contest has begun may be limited because of space restrictions.
- Each team member must be enrolled as a high school, undergraduate or graduate student.



Operational Details:

- Teams will be allowed into the contest venue to set up no later than **four (4) hours** before the contest begins. At this time, teams must set up and clear the stage for the competition, which will **begin at 12:00pm**
- A team captains meeting will be held **ten (10) minutes** before the contest begins.
- Teams will compete in a designated order. Teams will complete their first run and wait until all teams have completed their first run. At this time, teams will be allowed to re-set their machines for the second run. There will be a short ten (10) minute break after the first run.
- Teams need to bring a **poster with their team name**.
- While the judges are calculating the results, the audience will be allowed on stage to view the machines more closely. Teams are encouraged to run their machines and answer any questions during this time.
- Each team will remove its machine and clean up its area immediately after the contest.

Judging Criteria:

Judging will be based on a **100 point scale** broken down into the following categories:

- 1) General Impressions (40 points)
 - i) Theme (0 to 10 points)
 - ii) Rube Goldberg Spirit (0 to 20 points)
 - iii) Presentation (0 to 10 points)
- 2) Timing Issues (30 points)
 - i) Minimum Run Length (0 to 10 points)
 - ii) First Run Length (0 to 10 points)
 - iii) Second Run Length (0 to 10 points)
- 3) Run Related (30 points)
 - i) Completed Task – Run One (0 to 15 points)
 - ii) Completed Task – Run Two (0 to 15 points)
 - v) Human Interventions (-5 points each)
 - vi) Objects Leaving Machine (-3 points each)



Team Name _____

Judge _____

General Impression (total of 0 to 40 pts)

i. Theme (total of 0 to 10 pts) _____

• Did the machine incorporate a standard theme? (0 to 5 pts) _____

• Did each step conform to the theme? (0 to 5pts) _____

ii. Rube Goldberg Spirit (total of 0 to 20 pts)

• How much of the materials used for the machine appears to be found rather than bought? (0 to 5 pts) _____

• Are the steps Innovative and unique? (0 to 5 pts) _____

• Did the steps flow in series or did they branch in parallel? (0 to 2 pts) _____

• How many steps were incorporated into the machine? (0 to 8 pts) _____

iii. Presentation (0 to 10 pts)

• Clear and well displayed poster (0 to 5 pts) _____

• Ability to answer questions and explain their machine (0 to 5 pts) _____

General Impression Total _____

Timing Issues (total of 0 to 30 pts)

i. Minimum Run Length (0 to 10 points) _____

Does the machine run for a minimum of one minute (1) and thirty seconds (30)?

Run 1 _____

Run 2 _____

ii. First Run length (0 to 10 pts) _____



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The difference between predicted run length and actual run length

1:30 min difference = -10 pts deduction, -1 pt per 12 second

Predicted Run Length _____

Actual Run Length _____

Difference in Duration _____

iii. Second Run length (0 to 10 pts)

The difference between predicted run length and actual run length

1:30 min difference = -10 pts deduction, -1 pt per 12 second

Predicted Run Length _____

Actual Run Length _____

Difference in Duration _____

Timing Issues Total _____

Run Related (max total 30 pts)

i. Completed Task (Run 1)

If task is completed, 15 pts

If half the steps are completed, 10 pts

If less than half the steps are completed 0 pts

ii. Completed Task (Run 2)

If task is completed, 15 pts

If half the steps are completed, 10 pts

If less than half the steps are completed 0 pts

iii. Human Intervention (-5 pts each)

Run 1 _____



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Run 2 _____

iv. Objects outside of 6x6 area (-3 pts each)

Run 1 _____

Run 2 _____

Run Total _____

GRAND TOTAL _____



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Honor Code:

*Remember: We are students of a university, a noble institution, therefore we must uphold high standards in the work carried out during this competition. To ensure that there is fair competition, please sign the honor code below.

“I affirm that I have upheld the highest principles of honesty and integrity in my work during this Rube Goldberg competition at the University of California at Davis and have not witnessed a violation of the Honor Code.”

X _____ .