

Engineering Society Journal

This shared journal is where we document our sessions so that we may see our progress over time. Every week one of us hosts a session, the other two chairs are in charge to help the main presenter. Additionally, the two chairs who are not present will be documenting the lesson in a diary format, this ensures authenticity. Also, showing how effective the communication of the lesson was.

Contributors/Chairs: Junze Wang, Thomas Refalo, Yiming Aizezi

Order of presenting:

- 1) Yiming Aizezi
- 2) Thomas Refalo
- 3) Junze Wang

Session 1 - Wednesday 15th January 2025:

Today's session was hosted by Yiming. He talked about the Swiss escapement mechanism, found commonly in mechanical watches. This session is related to mechanical engineering. He printed the components in 3D. Taking inspiration from Henry Ford's first moving line assembly, he challenged the students to assemble the mechanism. Additionally, he also shared possible plans for an upcoming engineering competition we plan to host.

(Unfortunately, I forgot to take photos)

Session 2- Wednesday 22 January 2025:

Today's session was led by Thomas in this session he discussed telecommunications, hence today's session is focused on computer science engineers. He explained the difference between analog and digital signals and explains their benefits. Additionally, he included various questions for the members to answer, making the session both engaging and informative.



Session 3- Wednesday 29th Jan



Today's session was about movements where Junze discussed different types of gears. Some examples of the gears that he discussed are the spur gears, helical gears, Bevel Gears, Worm Gears etc. Where he explored the pros and cons and the technical applications in different fields of engineering. He also explored different applications where rotational energy can be transferred into

linear energy such as the Cam and Follower.

Session 4 - Wednesday 5th February

Today's session was hosted by Yiming. He needed to go to a big 6 speech so he couldn't make it. Unfortunately, all grade 11 had to attend, so none of the society chairs could make it. Instead, he created the slides presentation for the class as usual and recorded the entire session as a video format. He edited the video and shared it on YouTube so that the teacher can show the video to the class during the session. He also 3D printed a mechanism to show the class, which was shared during the session. According to the teacher, the class went well and the 3d printed mechanism was engaging for the students.

Video link to the video Yiming recorded for the session:

https://youtu.be/D40Rw5_i_aE?si=8lrLIVcONYPNJvhg



Session 5 - Wednesday 12 February

Yiming 3D printed a toroidal launcher for Thomas, who presented today. He explained how the toroidal gear launcher worked. Specifically: planetary gears. He explained its purpose and use. As well as benefits. Yiming and Thomas demonstrated the 3D printed toroidal launcher, adding practical elements to the engineering session.



Session 6 - Wednesday 19th February:

Today's session marks the beginning of an engineering competition challenge on egg drop. The usual schedule for presenting on sessions is paused. The next few lessons for the

competition are made by Yiming, Junze, and Thomas. The schedule will return after the competition, starting with Junze. The session today had around 25 participants, the most members we have had so far. We gave the introduction to the egg drop tournament and provided materials for students to begin creating their designs. They have also split into 3-5 people groups. Yiming 3D printed PLA eggs instead of using real eggs, this is so we make less of a mess. He has also made sure that the eggs have a durability similar to a real egg. Each team has been given a fake egg, for a total of around 7 teams.



Session 7 – Wednesday 26th February:

Today's session is the second day of the engineering competition challenge on egg drop. Although some of the girls did not come to this lesson, more boys were engaged in this competition, with around 25 students in total. Today, the students are engaged in making the design of egg drops, without any lecture today. This aims to let the students engage in the egg drop challenge and provide them with more time to reflect and innovate. During this lesson, after student voting, we also provided a balloon to each team in order to help them to reach success better. Furthermore, we also added a new criterion: Collaboration to our mark scheme. All the society chairs viewed the student's plan and gave some advice and encouraged the student to take more risk and design more eye-catching designs.



Session 8 – Wednesday 16th April:

Today's session is a continuation of the egg drop challenge after the holidays. We have decided to host the final egg drop challenge on the 30th of April. In today's session we had over 20 participants, and around 6 groups. We also brought hot glue guns as an additional resource for people to use. For our new members, we re-explained the egg drop challenge. They quickly fit it with other pre-existing groups and began engineering and creating a method to protect their egg.



Session 9 – Wednesday 23 April:

Today's session is the last session for the Egg drop challenge. Students are all engaged in making the final adjustment of their design. During this time, Thomas and Junze went to find the optimal place to drop the egg, while Yiming is actively supporting different teams. Most teams are lining up for the use of hot glue to connect various parts together. We can see students' creativity and aspiration from this session: the simulation of hot balloon, airplane, and spring system. After this session, all the team had their project ready for next week's actual drop.

