



Engineering

Jct4 Newsletter

Junior Cycle for Teachers

Junior Cycle for Teachers exists to **inspire, support, and empower** teachers in the transformation of Junior Cycle education in Ireland.

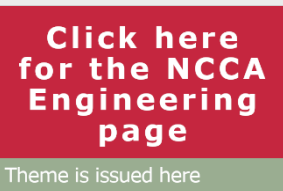


2022/2023 CPD

In the current school year, the Engineering Team have delivered CPD to all registered Engineering teachers across the country. We hope you found the sessions engaging and beneficial. We are currently developing the materials for next year's CPD day. We look forward to meeting you again in the coming year.

CBA 2 – Research and Development

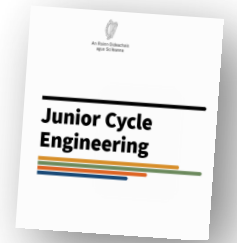
The NCCA will shortly announce the theme for CBA 2 which shall be completed during a three-week period in the first term in the new academic year.



Our Important considerations document, which outlines some information and steps that can be taken when engaging with Classroom-Based Assessments may be of use as you engage with the process. This document, and other supports for the Classroom-Based Assessments, are available [here](#)

Welcome

On behalf of the Engineering team, we would like to welcome you to the 11th edition of the Jct4 Engineering Newsletter, 'Summer Edition 2022'. It has been a busy year for Engineering teachers as we recalibrated our teaching strategies from the COVID era into the maskless workshops, all whilst guiding our students to the end of their Junior Cycle Engineering journey. As you prepare to wind down for the summer, here are some updates and information from the Jct4 Engineering team.



Effective Laser Cutting - Elective 2022

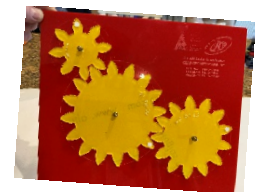
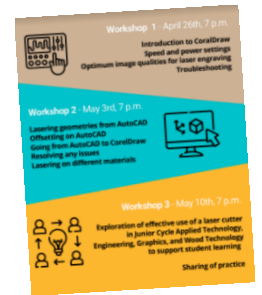
Over the past term, the Jct4 team have collaborated with ATU Connemara (formerly known as GMIT Letterfrack) to produce and deliver an elective on the process of Laser cutting. The elective was delivered across three consecutive Tuesdays. The response has been hugely positive, with workshops booked out over the three nights.

In session one, John McGuinness from ATU Connemara focused on the essentials of using the Laser machine such as routine maintenance and cleaning and the effective use of CorelDRAW to generate layouts.

In session two, Thomas Sheppard explored the use of AutoCAD to generate vector geometry for components. He also explored lineweight settings for the purpose of engraving and cutting operations.

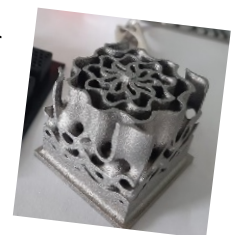
Session three afforded teachers the opportunity to engage in a subject-based, facilitator led discussion to explore possibilities to enhance student learning and workshop practice.

Exemplars from each subject were displayed on the night. Comprehensive tutorial videos from each session have been compiled and are available to view in the [elective workshops](#) section of the [JCT](#) website.



I-Form and 3D printing

Following the conclusion of our 3D printing elective, in partnership with I-Form and 3D WIT, we would like to thank all teachers who got involved this year. To finish the program, three face-to-face workshops were held in the ATU Galway campus, SETU Waterford campus, and I-Form on the UCD campus. These workshops gave teachers the chance to come together, experience some new learning on the capabilities of 3D printing and share their pedagogical approaches to maximise the potential of 3D printing in class. A 3D printer was awarded to three of the participating schools. We congratulate the schools and wish them every success in their 3D printing journey.





Hands-On Podcast Channel

Just a reminder that we have our own podcast channel on Soundcloud, which is available [here](#). In our most recent podcast we spoke to Mike Kelly and Paul Quinn from the 3D W.I.T and I-Form team. Discussions related to the developments in 3D printing and prototyping technology, how it supports design in the workshop and also where 3D printing can enhance prototyping in the design process.



Communication



[@Jct4ed](#)



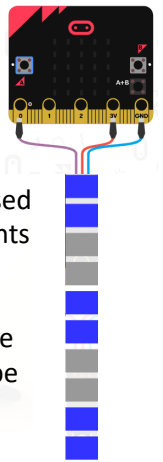
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Spring Webinar – Displaying Creativity in Engineering

In our most recent webinar, the Engineering team explored opportunities for students to get creative using modern digital technology in our subject. Using addressable LEDs, students engaged in activities which allowed them to identify applications of LEDs being controlled to create a lighting sequence. Students then used their own creativity and computer software skills to develop a lighting effect for a given application, in this case an emergency vehicle. JCT Associates used an integrated approach to structure a learning experience where students explored modern applications of technology and learned methods of adding creative features to their work in an authentic real-world experience. The recording of the webinar can be accessed [here](#), and the handouts featuring planning strategies for using addressable LEDs can be accessed [here](#).



Engineering in the world around us

The Ocean Cleanup is a non-profit engineering environmental organisation based in the Netherlands, that develops technology to extract plastic pollution from the oceans and intercept it in rivers before it can reach the ocean. In late October 2019, The Ocean Cleanup announced a new initiative, the Interceptor, to tackle the trash problem closer to the source, with plans to prevent 80% of waste coming from rivers worldwide.

The Interceptor is a solar-powered, automated system designed to capture and extract waste. Floating barriers direct the flow of water to guide rubbish towards the opening of the Interceptor and onto a conveyor belt, which delivers waste to the shuttle. The shuttle deposits the waste equally into one of six bins according to sensors. When the bins are full, they are emptied and the waste is delivered to local waste management facilities.



Some potential learning outcomes that relate to this initiative: 1.4, 1.5, 1.7.

Sustainability in the Engineering Room

Each year technologies’ subjects in schools across the country generate a huge amount of waste polymer materials. Coming towards the end of the school year, you might like to reflect on material use such as:

- What are the hazards of waste polymer?
- What strategies could be used in the workshop to reduce the amount of waste polymer created?
- What strategies do/could you use to ensure that the waste material is reused or recycled appropriately?
- How do you feel you could engage student voice to address this issue?



News and Events

Please continue to encourage your colleagues to sign up to the Jct4 Engineering newsletter via the mailing list opposite. Watch our [news and events](#) tab within the Technologies’ section of jct.ie and follow us on our Twitter page [@Jct4ed](#). Please feel free to contact any member of the team with your queries via email on the jct.ie homepage.

Best wishes for the summer holidays,
Kind regards,
The Jct4 Engineering Team.