



## **COVID-19 and the Faculty of Engineering, Peradeniya**

In a period where the universities all over the country are closed due to the COVID-19 outbreak, the Faculty of Engineering, University of Peradeniya has taken measures to continue their academic program with the help of online technologies. The Faculty, starting from the 30<sup>th</sup> March 2020, has initiated providing online lectures to all undergraduates. The online teaching activities are conducted through FEeLS (a Learning Management System named *Faculty of Engineering e-Learning System*) and all the lecture notes, slides, videos and other relevant materials are also uploaded to the system. Some laboratory classes that can be performed online are also conducted. All the online synchronous sessions are recorded and added to the FEeLS course pages so that the students will have access to them later. A number of final year research projects and the other projects are carried out with minimum disturbance. The supervisors schedule Zoom meetings with their students to give feedback and continuously work to improve their projects.

Lanka Education and Research Network (LEARN) is providing required network connectivity to Universities for the facilitation of e-learning systems and also a video conferencing solution. Although the e-learning systems and an LMS were used in the academic activities earlier, this period has allowed the lecturers and students to make the maximum use of this technology. By inspecting the statistics of the access data of LMS (from 23<sup>rd</sup> of March to the present day), it is clearly visible that the contribution of the Faculty of Engineering is at an impressive level. It is one of the top faculties from all the member institutions in LEARN, that has facilitated the greatest number of user activities during the past weeks.

While the Faculty of Engineering gives it best effort to continue the academic activities without any delay, the Faculty is also involved in some important projects to help the nation in its battle to safeguard the public from COVID-19 epidemic. One such project is the *Medical Ventilator Design and Repair Project* sphere headed by the Bio-Medical Engineering group of Department of Electrical and Electronic Engineering supported by the alumni of the Faculty from different parts of the country.. Within less than 24 hours, they were able to bring the first defective machine to working order and within less than two weeks, they have managed to bring more than 10 dysfunctional ventilators back to service through their commitment as a team. This work has been supported by various parties including the LTL Holdings Pvt., Ltd., Institution of Engineers Sri Lanka, Ceylon Oxygen Pvt., Ltd., Gas World Private Ltd, E/94, E/04. E/05 and E/10 batches, etc. The first set of 10 restored ventilators certified for their performance conformity with the generous assistance of Macro Med (Pvt) Ltd. and Technomedics International (Pvt) Ltd were handed over to the Ministry of Health on April 11, 2020.

While the ventilator project is showing fruitful results, Keshara Weerasinghe, a third-year computer engineering undergraduate has taken the initiative to build face shields to safeguard medical care front liners from the virus. This shield can prevent and obscure direct contact with the face removing saliva efficiently. Currently, the team is working on providing the shields to the Teaching hospital, Peradeniya

and other hospitals, including the Army Hospital in Colombo. Keshara believes that if enough resources are available, he could manufacture these face shields within the country itself, saving a huge amount of money that could otherwise be spent on importing these products. This face shield project is a collective effort by the Departments of Computer Engineering, Industrial and Manufacturing Engineering and the Engineering Design Centre.

Further, a set of Faculty alumni from 2005 batch of the Faculty of Engineering have worked on a project on providing video conversation system to facilitate contactless communication between patients and medical staff and it has already been donated to the IDH hospital on the 3rd of April 2020.





*The Ventilator Design and Repair Project: Some of the repaired ventilators(above) and some team members in action (below).*



*Keshara presenting his face shield to COVID-19 Steering committee (left) and Assembling of the shields at the Faculty (right)*