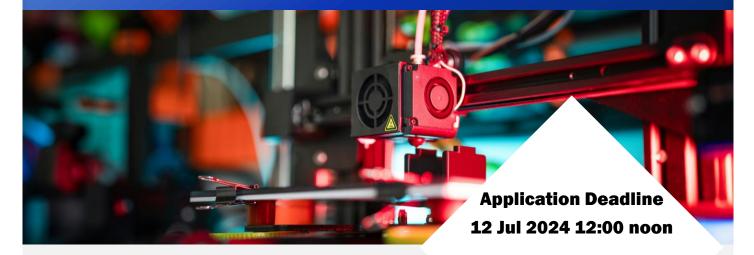**C1STM001W**

<u>(Token- required)</u>

[Gifted Programme]

STEAM Workshop (Level I)

Automatic Design for 3D Printing

Dr. SONG Xu

Mechanical and Automation Engineering, The Chinese University of Hong Kong

Application Deadline

12 Jul 2024 12:00 noon

Result Release

12 Jul 2024

Intended Learning Outcomes

Upon completion of the gifted programme, gifted students should be a

1. explain the concept of topological optimization algorithms used in existing CAD/CA software;

2. apply different design rules for 3D-printing;

3. explain the advantage and disadvantages of different printing technologies and corresponding design constraints;

4. demonstrate a higher level of understanding of 3D-printing-related subject in university.

◆ Gifted Programme Introduction

This workshop provides a practical guidance on how to design parts to gain the maximum benefit from what 3D-printing, or more professionally called additive manufacturing (AM) can offer. It begins by describing the main AM technologies and their respective advantages and disadvantages. It then examines strategic considerations in the context of designing for additive manufacturing (DfAM), such as designing to avoid anisotropy, designing to minimize print time, and post-processing, before discussing the economics of AM. The workshop then focuses on computational tools for design analysis and the optimization of AM parts. This workshop provides directly applicable, "hands-on" information and insights to help students adopt AM in their daily practice.

This worksohp is under collaboration of HKAGE and The Department of Mechanical and Automation Engineering, The Chinese University of Hong Kong.

◆ Schedule

Session	Date	Time	Venue
1	23 Jul	2:30 p.m. – 4:30 p.m.	Room 218, 2/F, William M.W. Mong Engineering Building, CUHK

◆ Suitable for

- S1 – S6 HKAGE student members in 2023/24 school year.
- Class size: 30
- Student members would be selected randomly by the computer system. The decision of HKAGE on the result of the selection should be final.

◆ Pre-requisite

No special prerequisites are needed

◆ Medium of Instruction

English with English handouts

◆ Certificate

E-Certificate will be awarded to gifted students who have:

- attended the session; AND
- completed all the assignments with satisfactory performance

◆ Enquiries 📞 3940 0101 ✉ programme@hkage.org.hk