From school to career, the possibilities are endless

Autodesk works with Singapore Polytechnic School of Mechanical and Aeronautical Engineering to nurture the next generation of engineers

Nurturing tomorrow’s design & technology leaders through curriculum integration

Autodesk is proud to partner with Singapore Polytechnic (SP) School of Mechanical and Aeronautical Engineering (MAE) to develop course curricula that will support the next generation of design and technology leaders. The goal of the partnership is to equip students with valuable workplace skills and provide a smooth transition from school to career. Autodesk® Inventor®, Autodesk® AutoCAD®, and Autodesk® Showcase® software are included, among others, in the SP MAE curriculum, ensuring that engineering students are exposed to the widely used professional 3D CAD design tools.

To support SP, Autodesk works closely with faculty members to provide training to students on the use of the software. Leong Teng Boon, SP MAE faculty member and Autodesk Certified Instructor, is excited about giving students a technological leg up. “Our students use Autodesk Inventor software to design and fabricate their projects. They go through the entire process—from sketching conceptually to creating simulation and analysis, all in digital form. We want to expose them to the latest technology available so they will be better equipped with the necessary skills and technologies when they graduate.”

Helping students realize endless possibilities

With the ability to create their projects in digital form, students can test and evaluate alternative design ideas and what-if scenarios, helping them to push creative boundaries. The flexible process saves time, provides the freedom to explore, and ultimately helps students optimize their designs, all within Autodesk Inventor’s easy-to-use environment. Final year project student Leonard Hoe says, “Autodesk Inventor was easy to learn, and once we mastered the basics, we were able to sketch and design intuitively and try out multiple alternatives quickly. This saved us a lot of time and enabled us to focus on optimizing our projects to their fullest—and prototyping capabilities enabled us to refine our projects further during design.”

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Immersive learning through local and international competition

SP and Autodesk celebrate and congratulate the design and engineering student champions at WorldSkills, the largest international skills competition in the world, bringing together 1,000 student competitors in 46 skill areas, from more than 50 countries. The competition measures competitors’ proficiencies using Autodesk® Inventor® Professional software for Digital Prototyping in the Manufacturing Technologies category, which covers all the skilled areas related to industrial development and creation—everything from the design, creation, making, and maintaining of anything involving electronics and machines. Specific contests that utilize Inventor are Mechanical Engineering Design CAD (Skill 5) and Prototype Modeling (Skill 45).

Inspiring the younger generation to engineering and the Maker Movement

Autodesk Asia Pte Ltd has partnered with SP MAE to present the Singapore Toy Design Competition for secondary schools, which a school may enter as an institution and its students may enter as individuals. Students get to learn about engineering concepts in a fun and engaging manner, using Inventor software to model fascinating animated mechanical toy sculptures called Automata. Automata originated from the Cabaret Mechanical Theatre, a highly acclaimed traveling exhibition in the UK that combines art, science, and technology. These toys showcase the fine art of engineering and are valued highly in the collectors’ circle. They can be brought to life by cranking a handle to move a shaft mounted with a series of machine parts such as cams, gears, linkages, belts and pulleys, ratchets, etc., which are in turn connected to the various parts of the sculptures to produce the desired movement. The Toy Design Competition is in line with the huge Maker Movement in Singapore, where young designers and engineers physically design and realize their ideas, focusing on the creative application of practical skills.

Through this highly successful partnership with SP, Autodesk aims to inspire future generations of students to create sophisticated 3D computer-aided models. The contest also gives secondary school students an opportunity to experience engineering lessons at a tertiary level.

Conclusion

Offering free Autodesk® professional-grade design software through various partnerships to over 200,000 students, Autodesk is advancing the learning environment in Singapore schools, exposing young people to the latest engineering principles and modules and inspiring them to explore endless possibilities for the future.

About Singapore Polytechnic

Founded in 1954, Singapore Polytechnic has over 18,000 full-time and part-time students in 80 diploma and post-diploma courses from its schools of Architecture and the Built Environment; Business; Chemical and Life Sciences; Communication, Arts, and Social Sciences; Design; Digital Media and Infocomm Technology; Electrical and Electronic Engineering; Mechanical and Aeronautical Engineering; and the Singapore Maritime Academy.

Singapore Polytechnic was established in 1954 to meet the manpower needs identified by the government. The institute of higher learning was the nation’s first polytechnic and prides itself on offering students a holistic education with a progressive curriculum that is closely mapped to industry needs. Its ten academic schools offer 50 full-time diploma courses for almost 16,000 students.

Singapore Polytechnic’s School of Mechanical and Aeronautical Engineering (MAE) was the first to offer a full-time engineering course in Singapore, and continues to lead in educating engineering technologists to support the nation’s growth and development. Diploma courses include aeronautical engineering, bioengineering; mechanical engineering; and mechatronics and robotics.