



Student project body design

Prototype of a body for a model car

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CATIA Gives German Apprentices a Competitive Edge

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CATIA workstations in four modern classrooms



Manufacturing of the vehicle model

At the heart of the German dual education system, the Gottlieb Daimler vocational school provides its students with CATIA training. Graduates are professionals equipped with much demanded new skills that help them land better jobs.

Preparing students for the challenging task of finding employment is a key objective of the Gottlieb Daimler School 1. Located in Sindelfingen, near Stuttgart, the school is named after one of 19th century's most influential inventors. GDS1 is an exemplary player in Germany's dual education system, which enables students to combine apprenticeships in a company and vocational education. Its mission: to train young people for metallurgy and technical jobs.

Students enrolled in professional curricula use CATIA for training and project work. "We are among the few vocational schools in Germany to use CATIA in our courses and projects," said Jan Georg Schröder, department leader at GDS1. "We not only teach geometry creation, we also focus on CAM, namely milling machines or production of STL data for our rapid prototyping equipment."

SKILLS THAT RIVAL THOSE OF ENGINEERS

Mechanical designers with CATIA knowledge are in high demand. GDS1 graduates compete for the same jobs as engineers who come from universities of applied sciences. "Our technicians, who often complete their education with work experience at OEMs, automotive suppliers, machine manufacturers or medical equipment makers, are in big demand on the market," said Schröder. GDS1 graduates have industry know-how, project organization skills and are, above all, proficient in CATIA.

CATIA - A STANDARD ACROSS INDUSTRIES

"CATIA is the standard in the industry and this includes suppliers many of whom in the Stuttgart area use this solution," commented Schröder. "This is why providing CATIA training to our students puts them at a considerable advantage when looking for employment. We reproduce real industry conditions here

at school. For example, we distribute different development tasks of a vehicle to several teams, and their objective is to seamlessly reassemble the data in one model."

Design methodology is part of the core program provided to first-year students. "Since 40% of our graduates work in the automotive industry, mostly as designers, their CATIA training gives them a significant advantage," said Jörg Jud, senior teacher, GDS1.

The school's commitment to CATIA is illustrated by the number of workstations that has continued to increase over the years bringing today's total to 68.

A solid CATIA training for technical product designers



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AN INTRODUCTION TO THE CAD CAM CAQ PROCESS CHAIN

CATIA training begins with the design and drawing of parts and assemblies. In their second year, students receive training on Generative Shape Design, a more sophisticated surfacing application. With respect to additional learning subjects, Schröder said, "As part of their final technical project, second-year students also have to define a development plan and do a cost analysis. Their acquired knowledge of CATIA and project management skills are often the silver bullets that help land the desired job."

Of course, during their project, students are eager to build something. Sometimes they like to add detailed features that turn out not

to be manufacturable. Jörg Jud explained, "I sometimes have to dampen their enthusiasm and ask my students: can the part be machined? Can it be assembled? Does its design render production too expensive?"

"It's important for students to acquire autonomy when conducting a cross-disciplinary project," explained Jud. "A part designed in my class can be used in my colleagues' class to program the machining. The result can be used in a post-processor and sent to the cutting machine. Finally the quality of the produced part can be measured with a 3D laser scanner."

PARTNERING WITH COMPANIES AND SCHOOLS

"At every step of the way, we have received excellent support from DESYS, a Dassault Systèmes business partner in Böblingen. And it's lucky for us they are around and readily available to lend a hand," said Jörg Jud. The school is currently planning the next steps in its CATIA education program. With the help of DESYS, all students have been able to acquire a powerful laptop with a one year CATIA license at a very affordable price. Jud added, "At the start of the current school year, our students will be able to use CATIA on their laptops anywhere, anytime."

This will benefit ongoing school projects. One example is a mandatory course called "product design", which is a joint effort with the Tamiya Company to develop and produce the prototype of the body of a remote-controlled car model. The students are also working on the design and manufacturing of a glider with a partner school in Singapore. This involves a great amount of engineering creativity, which quickly and more reliably is transformed into reality thanks to CATIA •]

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