



3DEXPERIENCE

ACADEMIA
EDUCATION PROGRAMS
Instruments for Educational Success



INTRODUCTION

In today's globalized economy, the academic community must constantly reinvent itself to prepare the engineers of the future. Dassault Systèmes has a long-standing tradition of collaborative innovation with educators across the globe. As a result, users of our cutting-edge **3DEXPERIENCE** platform benefit from an extensive set of tools and content to accelerate their own educational innovation.

This document shows how you can use these powerful tools to support your endeavors and your students throughout their learning experience.

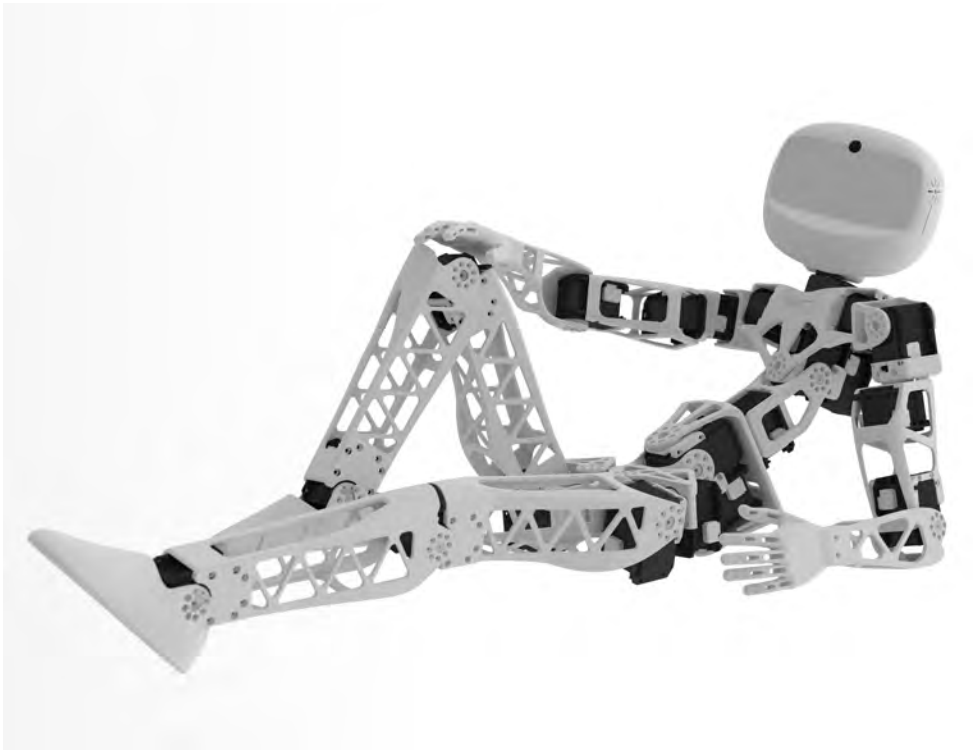


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BE PREPARED

A unique global offer from kindergarten to higher education.

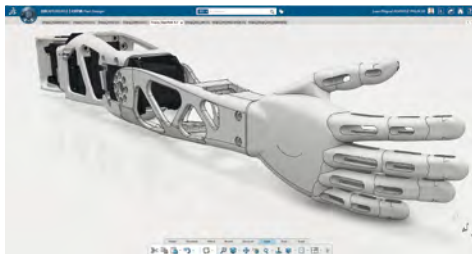
3DEXPERIENCE® FOR ACADEMIA

The most advanced software for product and learning innovation is now available in a few clicks, on the cloud. Educators and students can experience the engineering practices of industry leaders and increase employment opportunities in the new global economy. Years of collaboration with educators and students across various institutions and disciplines have led to a set of flexible, tailored learning solutions.

3DEXPERIENCE for Academia encompasses a suite of world-class integrated software:

- CATIA® for product design; DELMIA® for digital manufacturing; SIMULIA® for realistic simulation; ENOVIA® for collaborative innovation

With **3DEXPERIENCE** for Academia, educators in high schools and in higher education provide their students with the product innovation practices and knowledge that make champions in all industries, nurturing a more competitive and more innovative workforce.



SOLIDWORKS EDUCATION

Innovative learning for design and product development

In today's competitive job market, CAD professionals don't just design – they

simulate, innovate, visualize, and communicate – to advance new ideas and their careers. The SOLIDWORKS® Education Program provides powerful, engaging, hands-on software to understand and develop designs for the real world. The integrated 3D software, curriculum, and lessons make design development easy to learn, easy to teach, and exciting to use.



Give your students a career advantage

SOLIDWORKS Education Program offers an extensive suite of proven tools – engineering design, mechanical and flow simulation, sustainable design, electrical, documentation, visualization – in one, integrated, easy-to-learn software package.

For Educators – Enhance student learning with tailored curriculums and study aids.

For Students – See how SOLIDWORKS speeds up design projects.

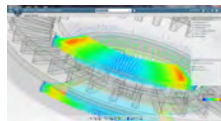
For Researchers – Rely on SOLIDWORKS to accelerate discovery and new levels of performance.

With SOLIDWORKS Education Program, you have access to 3D development tools used by millions of engineering and design professionals around the world. SOLIDWORKS helps engineers and designers in multiple industries meet demand for innovative, high-quality products – in less time and at lower cost.

BE PREPARED

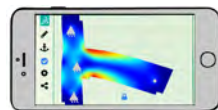
Abaqus®

The Abaqus Student Edition is available free of charge to students, educators, and researchers for personal and educational use. Now you can have your own personal finite element analysis tool to use on or away from campus. Classroom and research packages are available, complete with our suite of solutions for realistic simulation.



SIMULIA SIMKRAFT

An interactive app using the SIMULIA SimKraft app, lets you draw 2D geometry with your finger, apply boundary conditions, and then simulate results by “loading” the design using your finger. The process is easy to comprehend and to teach. SIMKRAFT is the ideal app for kids to discover how much fun STEM (Science, Technology, Engineering, and Mathematics) is.



CATIA V5

CATIA is the world’s leading 3D CAD engineering and design software for product excellence. It is used to design, simulate, analyze, and manufacture products in a variety of industries. CATIA is taught at thousands of academic institutions around the globe to prepare tomorrow’s engineers.



DRAFTSIGHT®

DraftSight is a free, professional-grade 2D CAD product built around an open business model.



ICEM Surf

The Art of Surface Modeling: ICEM SURF is the software solution used for Class A-surface modeling, surface analysis and design visualization.



SOLIDWORKS APPS FOR KIDS

SOLIDWORKS APPS FOR KIDS introduces children aged 4 to 14 to the excitement that comes when you imagine and design your own creations. A collection of apps breaks down the design process into bite-sized tools to create, style, design, and engineer a concept and then present and share it with others.



Discover more at [ACADEMY.3DS.COM/GET-SOFTWARE](https://academy.3ds.com/get-software)


BE TRAINED

Adopters of Dassault Systèmes' academic solutions benefit from a broad range of free online training content.

ONLINE COURSES

From quick videos to comprehensive training guides used by professional engineers, hundreds of self-paced educational materials are available for students and educators whatever their preferred learning style.


More than 700 courses related to the academic solutions are available online.




CATIA R2016x Update for Mechanical Designers
Teacher, Student

Companion - 8 hours

This course will teach you how to use the enhanced functionalities in 3D-SPRINT/ICE R2016x


 [TAKE COURSE](#)




Introduction to Enterprise Knowledge Language
Teacher, Student

Companion - 4 hours

This course will introduce you to Enterprise Knowledge Language, used in different knowledge-based apps, which allow you to construct smart models and automate design for maximum productivity.


 [TAKE COURSE](#)




Quick Surface Reconstruction
Teacher

Companion - 8 hours

This course will teach you how to use CATIA features in Quick Surface Reconstruction workflow in the Reverse Engineering phase to create surfaces using a given Point Cloud data. You will also learn how to use these features in real

 [TAKE COURSE](#)



Simulation Process (2/2)

Example: Simulation best practices and methods are captured in a workflow of simulation activities. Exercised by an *single individual*, automatically, its simulation process can be task within a business process.


Define Simulation

- CAD Design
- CAE/CFD Analysis
- Mission Analysis
- Cost Analysis

Iterative Process

- Design Concept
- Prepare Simulation
- Formulate Problem
- Adjust Inputs
- Run Simulation process
- Review Outputs


Decision Process



Introduction to Kinematics
Student

Companion - 2 hours


[TAKE COURSE](#)



Discover CATIA Reverse Engineering
Teacher, Student

Companion - 8 hours

In this course you will learn how to read, import and process parts digitized to clouds of points, and build a surface model from digitized data.

 [TAKE COURSE](#)

HIGHLIGHTS

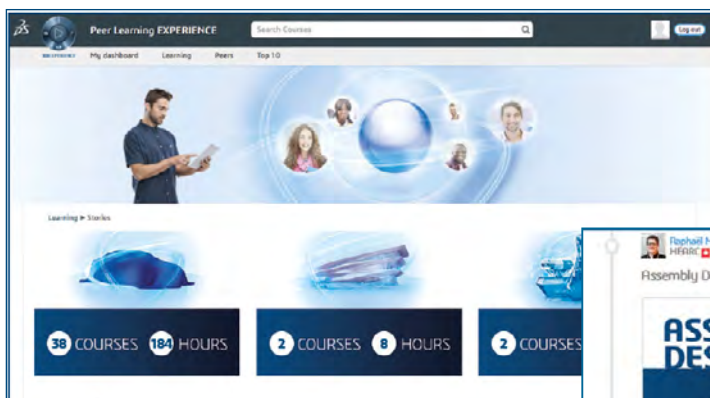
- Compliant with Dassault Systèmes' recommended methodology
- Rich database of exercises on a wide variety of industrial cases
- Course contents updated at each new release

BE TRAINED

PEER LEARNING EXPERIENCE

Online social learning solution

The **Peer Learning EXPERIENCE** is an innovative online learning solution for any academic user of Dassault Systèmes' **3DEXPERIENCE®** platform, connecting educators and students in secondary and higher education within a cloud-based workspace to experience cutting-edge practices in Engineering, Design, and Project Management. The Peer Learning EXPERIENCE immerses participants with their peers in an interactive journey along learning paths and reproduces classroom-style co-learning techniques. Learning sequences and modules are co-developed by an international community of educators working in expert committees. Educators now have powerful means to enrich their teaching with engaging in-class and home-based activities that realistically reflect up-to-date industry methods.



HIGHLIGHTS

- A free online learning solution available anywhere, anytime, for any academic user of Dassault Systèmes' **3DEXPERIENCE** platform
- Unique collaborative engineering instruction from a global community of educators
- Learning modules that can be easily implemented in curricula (lectures, collaborative project, etc.)
- A solution tailored to the needs of both educators and students, encompassing theoretical and industry methods
- Ideal for deploying co-learning across geographies



Discover more at [ACADEMY.3DS.COM/LEARN-ONLINE](https://academy.3ds.com/learn-online)

BE RECOGNIZED

Global collaboration, cross-disciplinary innovation, and systems thinking are the winning attributes of today’s engineers. To increase their employability, students must develop these cutting-edge skills. Dassault Systèmes solutions natively integrate this new dimension. We support and facilitate programs involving hundreds of students across numerous countries and universities, enabling them to work collaboratively on cutting-edge solutions in a multicultural, multidisciplinary environment. With our Certification and Academy Member programs, we also provide students and institutions with the means to demonstrate their capabilities to employers.

CERTIFICATION

For Better Employment Opportunities

Dassault Systèmes Certification program provides students and educators with a robust and recognized environment to assess and measure that the market’s most demanded solutions are effectively mastered by those who will be soon looking for a job. Based upon real and randomized hands-on exercises highly representative of what the Industry is demanding, the Certification tests require that applicants be well prepared to pass. With a constant pass rate at around 65% since the beginning, Dassault Systèmes examinations warrant employers that certification holders will be able to perform tasks and functions at a level that makes them immediately employable.

Tests can be taken in **certification centers** located on campus, making it easy for students and educators to get organized. Dassault Systèmes provides the secured online environment necessary to ensure compliance. Test results are known right at the end of each session. The sessions are automatically and remotely monitored rendering cheating impossible. Over the past decade, tens of thousands of students and individuals have been able to enrich their resumes and redirect their careers accordingly.

SOLIDWORKS Certification lets students demonstrate their expertise with SOLIDWORKS 3D solid modeling, design concepts, and sustainable design, and their commitment to professional development. With over 11 SOLIDWORKS Certifications, including the CSWA-Academic and the CSWP-Academic, students prove to potential employers that they are proficient with SOLIDWORKS and that they know how to design using industry-standard best practices as well. The SOLIDWORKS Certification Program gives students a proven edge in today’s competitive job market.



BE RECOGNIZED

ACADEMY MEMBER PROGRAM

Recognizing Institutions Focused on Employability

The Dassault Systèmes Academy Member program acknowledges academic institutions engaged in using the latest Dassault Systèmes software in their programs of study. Those institutions show a commitment to increasing the benefits of 3DS tools for student employability and curriculum quality. This recognition is shared throughout our entire ecosystem (website, social media, newsletters).



Benefits of this free program include the promotion of members by Dassault Systèmes on the web and other media channels, as well as the right to use and display the exclusive Academy Member logo. Academy Members receive an official plaque and certificate.

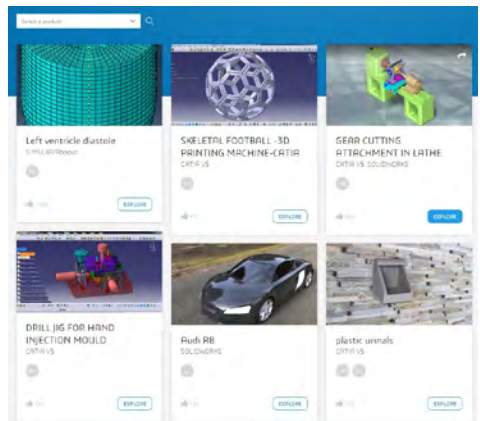
PROJECT OF THE YEAR (POTY) CONTEST



Did your students produce a project, model, video or presentation involving one or more Dassault Systèmes solutions? Dassault Systèmes awards prizes for the best projects of the year, offering students the chance to win a host of exciting prizes.

- Students simply enroll on academy.3ds.com and post their project.
- They get their friends to vote for them by publishing a feature about their project on their Facebook wall. Our panel of judges also rewards its favorite projects.
- The best CATIA, SIMULIA and SOLIDWORKS projects are also rewarded separately.

POTY is open every year for a two-month period. Stay tuned on our social media!



Discover more at [ACADEMY.3DS.COM/BE-RECOGNIZED](https://academy.3ds.com/be-recognized)

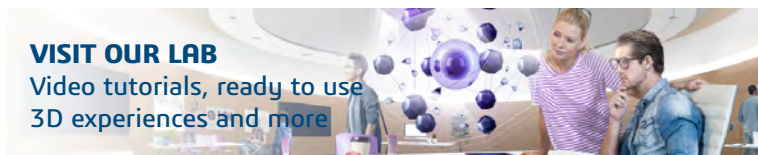
BE CONNECTED

Students and educators who use Dassault Systèmes solutions are part of a large, vibrant community that interacts on a global scale. From people sharing common interests to turnkey educational material and educational innovation results, a universe of inspiration, friends, and practical knowledge is just a click away.

3DS ACADEMY WEBSITE

Dassault Systèmes provides teachers and students with an abundance of free content on its Academy website. Thousands of academic institutions have already joined the community, which offers a wealth of resources in an easy-to-navigate online format.

→ [ACADEMY.3DS.COM](https://academy.3ds.com)



BE CONNECTED

SOLIDWORKS COMMUNITY

One Place to Connect, Discover, and Share Everything about SOLIDWORKS.
Find answers to your questions across the SOLIDWORKS Community and Support resources.

→ MY.SOLIDWORKS.COM

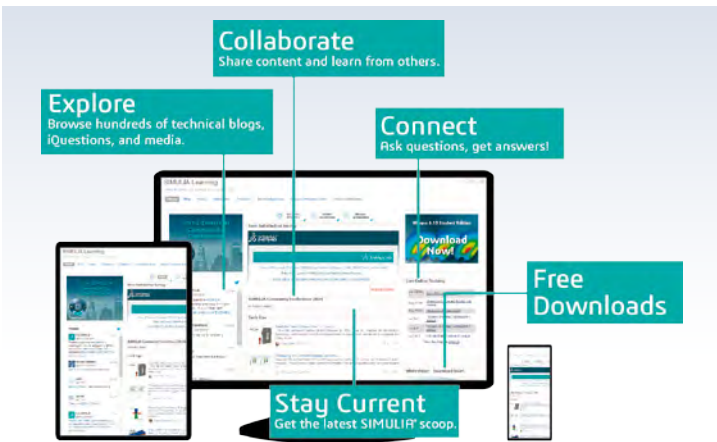


SIMULIA LEARNING COMMUNITY

Be part of a global user community focused on advancing the use of Abaqus, Isight, and Simulation Lifecycle Management.

Join today and gain instant access to technical blogs, tutorials, demos, and more!

→ 3DS.COM/SLC



BE CONNECTED

SOCIAL MEDIA

Dealing with the academic world naturally implies being present on social media. Our global Academia team engages with users every day via Twitter, Facebook and YouTube to bring you updates from the community, as well as contests, videos, and testimonials.



Come and like us on Facebook! Discover a whole range of interactive content (Project Of The Year, 3DSAcademy Quizzes, pics, videos and more), with daily posts and thousands of fans. This is the best place to share, comment, and interact!

→ Facebook.com/3DSAcademy

→ Facebook.com/SOLIDWORKSEducation



To catch up with our latest news, follow us on Twitter. New daily content updated with hot news from Dassault Systèmes and the global Academia department. We cover student events and contests with live pics and the latest videos.

→ Twitter.com/3DSAcademy

→ Twitter.com/SOLIDWORKSEdu



To see all our videos, subscribe to our YouTube channel. Educators and students can find hundreds of videos with rich and diverse content, including playlists, tutorials, animated 3D models, student testimonials, interviews and more.

→ YouTube.com/c/3DSAcademy

→ YouTube.com/SOLIDWORKS

BE INNOVATIVE

Dassault Systèmes' educational research is conducted by our Learning Lab collaboratively with educators from all over the world. All results of this work are made available on line in the form of fully documented learning experiences, ready for adaptation in various types of learning institutions. The learning lab focuses on digitally enhancing leading-edge learning methodologies and on new learning subjects as they emerge from the ongoing transformation of practices required by the industry of the future.

DIGITALLY ENHANCING NEW LEARNING METHODOLOGIES

Flip Labs for mobile hands-on learning

While computer models represent realistic objects in combination with their functional behavior, **an entire lab activity can be digitized** to flip not only the class but actual lab sessions, provide more learning time at less cost, and augment the e-learning experience. Integrated logical and physical 3D simulation models make the control lab ubiquitous and transform the very nature of activities during actual lab sessions.

Digital Problem-based Learning: ePBL

ILICE (Inspire, Learn, Innovate, Create, Evaluate) is a freely downloadable configuration of the **3DEXPERIENCE** platform for Problem Centric Learning. It collects a vast set of functions of the **3DEXPERIENCE** platform into an integrated dashboard which encourages ideation, project management, design and simulation. Tested by educational pioneers, it popularizes the digital practices enabling Project/Problem Based Learning and CDIO® (Conceive, Design, Implement, Operate) methodologies. By leveraging the social capabilities of the **3DEXPERIENCE** platform, it helps project supervisors to better mentor teams and better evaluate their work and their activities, on site or from any internet connected location.



BE AN ENGINEER

This learning program provides students with an integrated, multi-role activity that goes through various facets of computer aided engineering, addressing new practices such as design in context, simulation and additive manufacturing, based on LEGO Mindstorms®. Designed for the last year of high school and the first year in higher education, this activity provides a complete, group-based, eye-opening discovery of engineering and does not require preliminary knowledge of the digital solutions employed.

BE INNOVATIVE

LEARNING PRACTICES REQUIRED BY THE INDUSTRY OF THE FUTURE

3DEXPERIENCE & ARDUINO™

Push the boundaries of prototyping by running cyber-physical software-in-the-loop simulations. With the **3DEXPERIENCE** platform, students control both a tabletop Robotic Arm and its virtual twin, using an **ARDUINO™** micro-controller as interface.



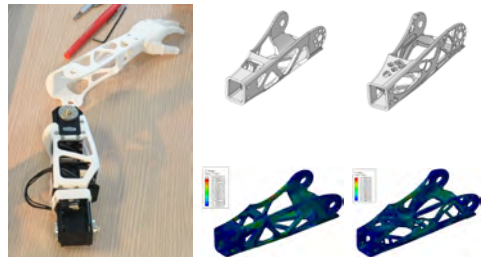
Experiential Learning for IoT Generation

At the center of the Industrial Internet of Things (IIoT) is the virtual twin of production equipment. This learning activity for engineering students provides hands-on activities to experience fundamental principles of the virtual twin. Students use the digital avatar of the open source Poppy® humanoid robot to synchronously control and monitor the actual robot.



DESIGN OPTIMIZATION FOR ADDITIVE MANUFACTURING PROCESSES

One of the latest techniques spurred by government-led manufacturing initiatives is additive manufacturing, a technique that not only revolutionizes the production of industrial parts but also their design. The unprecedented design freedom ushered in by additive manufacturing makes it possible to optimize shapes like never before through topological optimization, producing organic shapes that minimize the material used while maintaining or improving structural strength. This learning experience leverages the power of the **3DEXPERIENCE** platform to enable students to optimize such parts based on the mechanical structure of the Poppy robot.



Today's engineers seek to develop innovative products in the shortest time possible. Lightweight design, safety, ease-of-use, performance, efficiency and durability are just some of the aspects to take into account. The Tosca optimization suite creates optimized design concepts to achieve the highest performance, quality, and eco-efficiency with shorter development time.

Discover more at [ACADEMY.3DS.COM/VISIT-OUR-LAB](https://academy.3ds.com/visit-our-lab)

BE INSPIRED

Various national manufacturing initiatives taken by many governments are driving new industry practices that have been translated into education activities by the Learning Lab.

FROM SECONDARY SCHOOLS...

INSPIRING FUTURE ENGINEERS

FIRST (For Inspiration and Recognition of Science and Technology) is a U.S. not-for-profit organization devoted to helping young people discover and develop a passion for STEM. FIRST attracts hundreds of thousands of youth, mentors, coaches and volunteers from dozens of countries. SOLIDWORKS is a proud Crown Supplier of FIRST Robotics.



To download the application form for sponsorship and resources to get started, visit solidworks.com/FIRST

ADVANCED ENGINEERING FOR THE YOUNGEST

The **Bridge Design project** helps students learn the principles of structural analysis through a series of movies and models for constructing a trussed wooden bridge. Students use SOLIDWORKS Simulation to analyze loading conditions.



Visit the “Learning CAD and Simulation” section of solidworks.com/curriculum and download:

- Project manual
- Construction guide
- Measuring chart for teachers and students
- Presentations

TEACHING STEM THROUGH ROBOTICS

EURLAB (EUropean Robotic LABoratory) is an EU-funded Erasmus+ project which brings together high-school students, teachers and companies in Europe to create, develop and implement lasting learning practices and materials in robotics, a cross-disciplinary field. As well as combining mechanical design, coding and fabrication, the project also provides a rewarding international experience in which high-school students collaborate across three countries (Italy, Germany and France), delivering authentic learning outcomes in both technology and life skills.



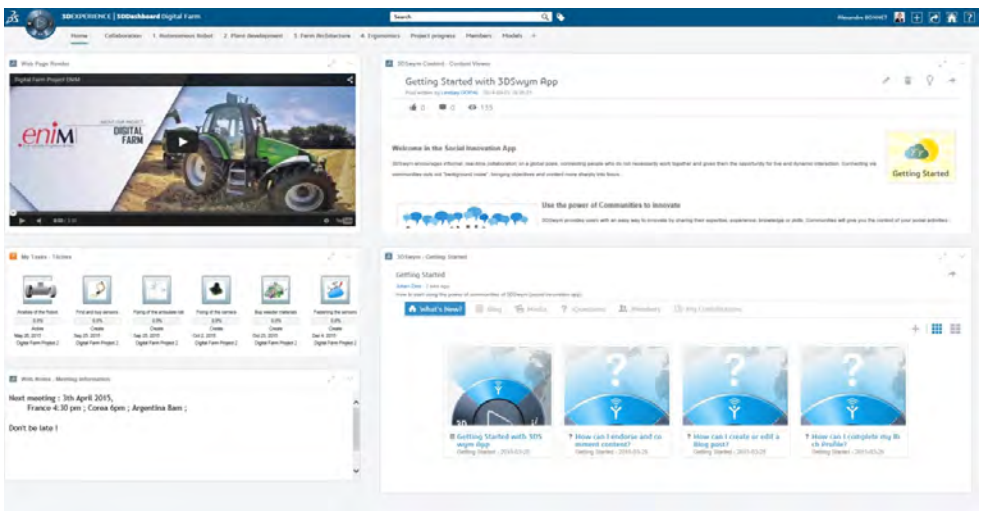
BE INSPIRED

... TO HIGHER EDUCATION

DIGITAL FARM

Digital Farm is an international, collaborative and multidisciplinary project that brings together students from around the world through a problem-based learning experience combining various disciplines.

Connected through cutting-edge digital practices and tools, students build tangible competencies by working across distances, cultures and disciplines.



BE INSPIRED

COLLABORATIVE PLATFORM FOR SYSTEMS ENGINEERING

The **PLACIS** project developed by Supmeca, EISTI and ENSEA engineering schools (Paris region) is aimed at creating, developing and trying out an international, collaborative platform for systems engineering students.

Within the scope of the project, teams of students from all over the world connect to work on real-life industrial issues raised by companies thanks to the **3DEXPERIENCE** platform, enabling them to acquire both further knowledge and professional experience in systems engineering.

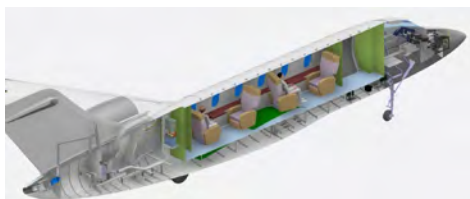


The **PLACIS** project is managed by the French National Agency for Research under "Investments for the future" program with the reference ANR-11-IDFI-0029.

FACTORY FUTURE

Factory Future is a project led by the University of Lorraine (France) with a dozen partnering institutions. It gathers globally dispersed students across 12 time zones in a problem-based learning experience that combines various fields of study, such as engineering, communication, management, education, innovation and architecture. Their task: imagine and design the factory of the future in a credible, engineering-sound manner.

Connected to cutting-edge digital tools, such as Dassault Systèmes **3DEXPERIENCE** platform, students acquire valuable skills and experience in working across distance, cultures and disciplines.



Discover more at [ACADEMY.3DS.COM/VISIT-OUR-LAB](https://academy.3ds.com/visit-our-lab)

NOTES

Our 3DEXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 210,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.

