egpr

european
global
product
realisation

the stars of
the future

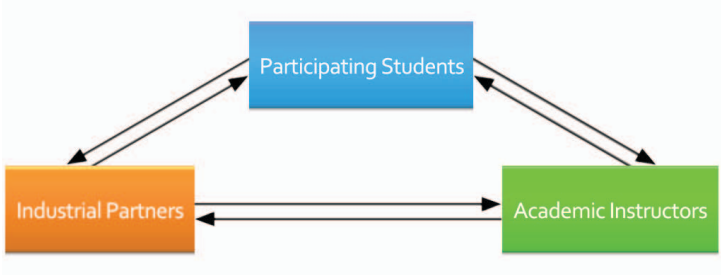
About

The European Global Product Realization (EGPR) course is an academic virtual enterprise which joins together students from multiple European universities. Different cultures, experience and knowledge are tossed together to realize a project in a virtual environment. The aim of the project is to materialize a global product which includes steps ranging from the market research to the production of the physical working prototype.

In the past few years, universities took part from five cities such as Budapest, Lausanne, Ljubljana, London, Zagreb and an industrial partner that is different in every year.

The human resources of the academic enterprise are the academic instructors, university students and company specialists. The enterprise is formed for one semester. The primary goals of the enterprise are to gain the professional (market analysis, financial issues, product specifications, vision formation, concept generation, concept solution, materialization, prototyping and testing) and communication knowledge and the solution of the practical problem, assigned by the partner company.

The people involved in the EGPR course are brought together by advanced communication means, where videoconferencing is considered as the key communication tool. The students gradually gain knowledge by attending lectures given by renowned professors and other experts and professionals. Students form international teams, thus bringing together their knowledge from different fields to solve problems arising from the assignment. Each student contribute with 160 hours of intensive learning and development, an effort that is being honored with credit points.



There are four different phases, during each the teams elaborate their work and at the end of each phase the researches, ideas, detailed concepts are presented for the company specialists, academic instructors and university students at a videoconference meeting.
At the end of the semester, students will develop physical prototypes of their proposed concepts. Finally, all involved in EGPR meet in person during the closing workshop that is being held at the host university's country with the contribution of the partner company. If it necessery, the company may provide technological and professional resources for the teams during the workshop, where all components will be assembled together and the research work is being publicly presented and evaluated.

The motto of EGPR became "The Stars of the Future" indicating the possible impact of the project on the participants' life.

History

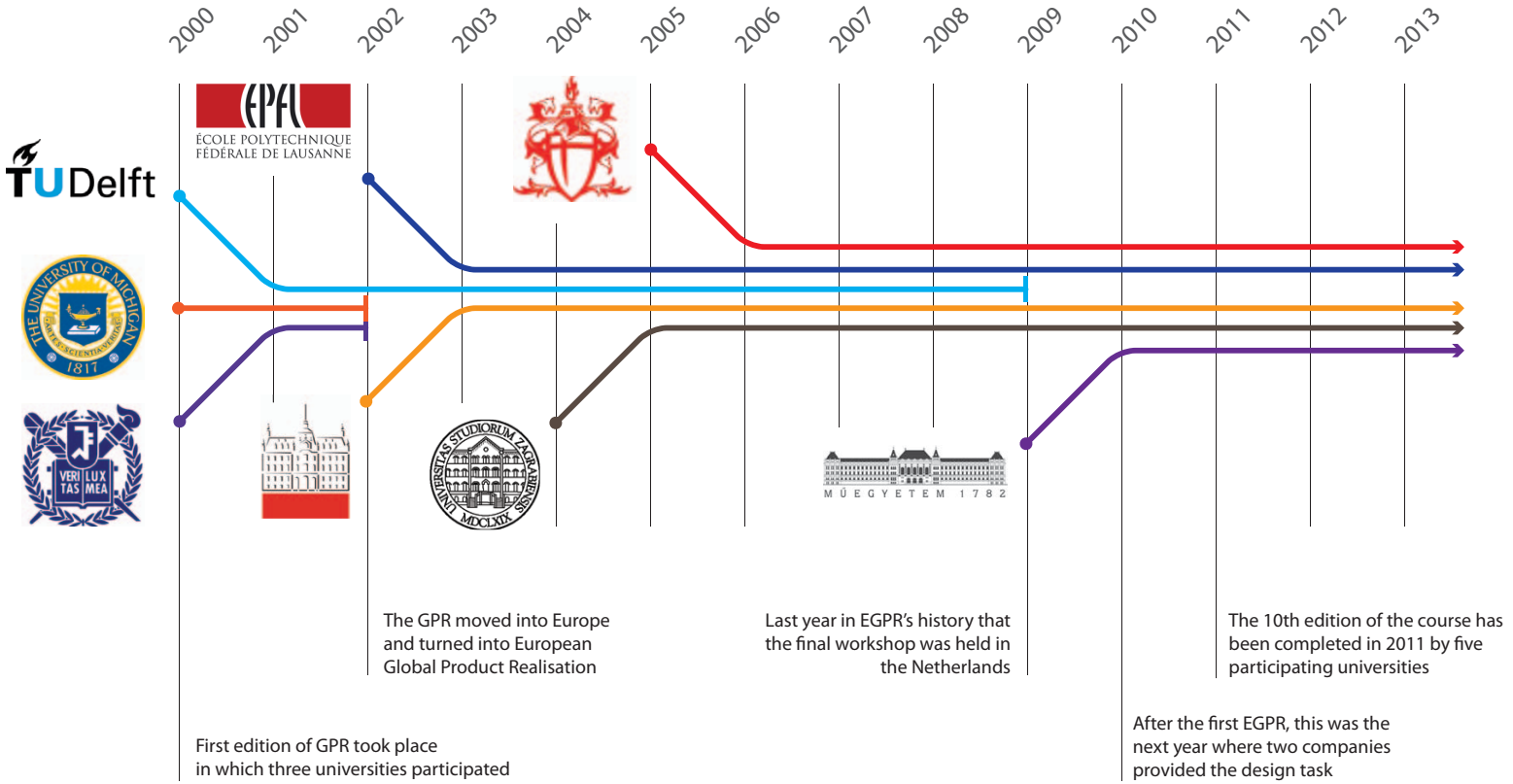
In 2000, a Global Product Realisation (GPR) course was offered to students for the first time when three universities from three continents carried out an intercontinental project in cooperation. Technical University of Delft (The Netherlands), University of Michigan (USA) and the National University of Seoul (South Korea) teamed up, motivated by industry's need for engineers who can think globally - even if they have to work locally - to develop products for a world market.

Due to difficulties caused by different time-zones and financial limitations, European universities decided to turn GPR into European Global Product Realisation (EGPR). The first edition of EGPR was carried out from the beginning of February to the end of May in the years 2002 and 2003.

In this first course, EPFL from Switzerland, FME Ljubljana from Slovenia and TU Delft from the Netherlands joined forces with two companies (LIV Postojna, Slovenia and deVlamboog, the Netherlands) in executing the first edition of the EGPR course. It was a great success which is now considered as the birth of EGPR. The concept of learning from each other during the projects worked out just fine and the course improved year by year. It started as a university course with the purpose of teaching students and giving them some useful experience about product development in an international environment, but it turned into a series of projects which is extremely useful to industrial partners as well. The participating student teams have generated hundreds of product concepts as an answer to the challenges of the partner companies and have built more than fifty prototypes. During the past eleven years, several new universities joined the course.

2010 was an important year in the history of the course. Since after the first edition of EGPR this was the first year in which the student teams faced with two very different project tasks, as well as with two very different company partners (BSH Nazarje and LIV Postojna).

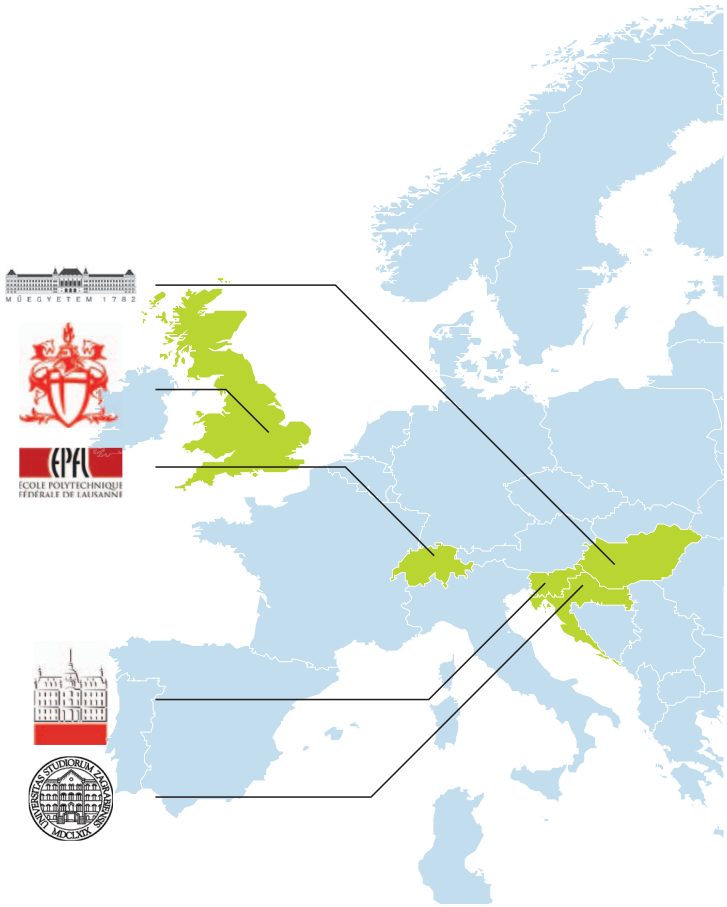
The 10th edition of the course has been completed in 2011 by five participating Universities (EPFL from Switzerland, FME Ljubljana from Slovenia, Budapest University of Technology and Economics from Hungary, University of Zagreb from Croatia and City University London) and an industrial partner Direct-Line Kft. from Hungary.



Universities

On the next few pages you can see information about the currently parcipating universites.

1. Budapest University of Technology and Economics, Budapest, Hungary (BME)
2. City University London, School of Engineering and Mathematical Sciences, London, United Kingdom (CUL)
3. Swiss Federal Institute of Technology (École Polytechnique Fédérale de Lausanne), Department of Mechanical Engineering, Lausanne, Switzerland (EPFL)
4. University of Ljubljana, Faculty of Mechanical Engineering, Ljubljana, Slovenia (UL)
5. University of Zagreb, Faculty of Mechanical Engineering & Naval Architecture, Zagreb, Croatia (UZ)



Budapest University of Technology and Economics was established in 1782. More than 110 departments and institutes operate within the structure of eight faculties. The university joined EGPR in 2009 with Faculty of Mechanical Engineering.

The departments of the faculty work in cooperation with more than 80 foreign universities and research institutes - cooperation that is evident in international research projects, conferences, and publications. The research that takes place in the departments serves both technological development and the training of engineers.

Budapest University of Technology and Economics

Contact person: prof. Károly Váradi
Adress: H-1111, Budapest, Műegyetem rakpart 1-3.
E-mail: varadik@eik.bme.hu
Phone: +36 1 463 35 07

City University London was founded in 1852 who is a principal provider of undergraduate, postgraduate, professional and vocational education in the United Kingdom and is renowned for its international focus and the employability of its graduates.

The University joined the EGPR course in 2005 led by School of Engineering and Mathematical Sciences.

City attracts over 23000 students from 156 countries, while teaching staff are drawn from nearly 50 international locations, ensuring that the University has a truly international outlook.

City University London

Contact person: prof. Ahmed Kovacevic
Address: Northampton Square, London EC1V 0HB, United Kingdom
E-mail: a.kovacevic@city.ac.uk
Phone: +44 20 7040 8780

École Polytechnique Fédérale de Lausanne is Europe's most cosmopolitan technical university, founded in 1853. It receives students, professors and staff from over 120 nationalities.

The EGPR course is done by the Laboratory for Computer Aided Design which was also the co-founder of the course in the year 2002.

With both Swiss and international calling, it is therefore guided by a constant wish to open up; its missions of teaching, research and partnership impact various circles.

EPFL Lausanne

Contact person: dr. Ian Stroud
Address: Route Cantonale, 1015 Lausanne, Switzerland
E-mail: ian.stroud@epfl.ch
Phone: +41 21 693 2949

University *of Ljubljana*
Faculty *of Mechanical Engineering*

University of Ljubljana was founded in 1919 on the basis of centuries of educational tradition, remaining the only Slovenian university for half a century.

Faculty of Mechanical Engineering is one of the constituting EGPR partners.

The course is managed by LECAD, Laboratory for Computer Aided Design.

The vision of the FME is to become the premiere teaching and research faculty for mechanical engineering in Slovenia and Southeast Europe while maintaining the highest educational and professional standards.

University of Ljubljana

Contact person: prof. Joze Duhovnik
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E-mail: joze.duhovnik@fs.uni-lj.si
Phone: +386 1 477 1 416

The University of Zagreb (1669) is the oldest and biggest university in South-Eastern Europe. Ever since its foundation, the University has been continually growing and developing and now consists 29 faculties, three art academies and the Centre for Croatian Studies.

Faculty of Mechanical Engineering and Naval architecture has been involved in EGPR since 2003.

Chair of Design and Product Development was founded in 1997 as one of the chairs of the newly established Department of Design Theory. Design science is the basis on which the work of the chair staff is focused.

University of Zagreb

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E-mail: dorian@fsb.hr
Phone: +385 1 6168 432

Why choose EGPR?

EGPR combines engineers of the future from five different European universities into five to six New Product Development (NPD) teams that are not limited by company boundaries and formal restrictions. Their young minds are open to creative solutions and guided by experienced University staff in structured development processes.

If you are a company with great ideas, but have limited time, EGPR is a great opportunity to develop these ideas further.

The key factor for successful realisation of the course is the proper choice of the industrial partners.

The course not only provides the students with New Product Development experience, but also provides the industrial partner with five to six working prototypes, based on structured research and development of the provided design tasks.

The students of the EGPR course provide a competitive advantage for the company. The EGPR course is also regarded as an opportunity for a closer cooperation between the university and the industry.

The relation is seen primarily in providing students with a real life problem that they can solve with designing an appropriate product. Consequently, the solution provides an opportunity for the participating industry, as all the activities necessary in NPD (from market analysis to prototyping) are executed by the participating students. In a constant search for new market opportunities and developmental potentials companies certainly support the EGPR course.

Both short term benefits and long term advantages for the future are expected. The industrial partners present a real-life problem for the products to be developed and provide the information and data about the existing models in the comparable families of products.

The students are the bridge between the academic knowledge and the industrial application.
In the last years, several companies joined EGPR to support young students with their great and innovative ideas embodied in prototypes.
Suman d.o.o. (2012), Direct-Line Kft. (2011), BSH (2010), UMC Utrecht (2009), Tehnix d.o.o. (2008), Kesslers (2007), NIKO (2006), AVIDOR (2005), FAE (2004), De Vlamboog BV (2003), LIV Postojna (2002).

These talented young adults are able to bring innovation to customer-focused European companies and why is it so useful for the companies?

- A remarkably cost effective means to develop and launch a new global product;
- exposure to the best academic institutions across Europe;
- incredible opportunities for promotion and prospect.

How could you support us as an EGPR industrial partner?

- Provide sufficiently open ended project assignment;
- be open-minded for a wide scope of possible solutions and innovations;
- allow students sufficient freedom to explore and develop own ideas and concepts;
- provide feedback that will eliminate developing of solutions that are useless for you;
- provide engineering help of their own experts in all project phases, especially at review points and in the final three weeks of the project when the review is required of the detailed design, assembly and manufacturing procedure.

Phases

EGPR course durates for almost five months, a bit more than a semester at the university. During this period of time, there are four phases with different topics, problems that must be solved by the students together. These problems are presented below.

1st Phase: Identification of the problem

The course starts with the local orientation meetings for the students then the first presentations take place. The first academic lecture introduces the European Global Product Realization course and the company representatives present the topics and the requirements for the semester project.

Identification of the problem is about

- clarifying the objectives of the project, main interests and capabilities of the company's problem;
- coming up with fresh ideas about the company's portfolio, infrastructure or even on overall product ranges or services;
- carrying out studies in all countries on primary and secondary source;
- understanding and predicting the needs for the products which the company manufactures or should manufacture. In addition, considering future tendencies, trends and technologies;
- determining a specific problem per team, based on their findings.

2nd Phase: Conceptualization

At this phase students are working on their own, creating their own solutions for the design problem.

Conceptualization is about

- creating alternatives to the selected product/system;
- providing rational concept evaluation and sorting out considering technical and economical factors;
- presenting concept ideas in good quality graphics.

3rd Phase: Detailed design

In the 3rd phase, each team's best idea should be chosen and they should work together on it to develope it and make the best solution for the problem.

The detailed design is about

- performing embodiment, detailing the design of the product and confirming manufacturability;
- keeping costs of prototype at the level set by the company;
- manufacturing parts in collaboration with the company when required.

4th Phase: Final workshop

At the host country the students, university instructors and representatives of the companies come together at the host university to develop and produce virtual and physical prototypes of their products.

The final workshop is about

- assembling prototypes on the basis of the specification. These may be life-size prototypes and/or scaled models, depending on the requirements and company specification;
- delivering complete documentation to the company including prototypes, drawings, reports;
- presenting the project to a broad range of audience on the final day of the project.

2009

Active rehabilitation support device

The design task was to develop a device which would help patients and physicians with the rehabilitation therapy. After extensive research and consultations with the company the student teams built four different prototypes and presented them at the final workshop in the Netherlands in June 2009.

company

University Medical Center

Teaching Hospital in Utrecht, Netherlands

workshop supporting university

Technical University Delft

"A fresh perspective can be powerful. There is always an off-chance for a disruptive innovation in such projects. Something that is completely new and completely different... that is great."

(UMC Utrecht)

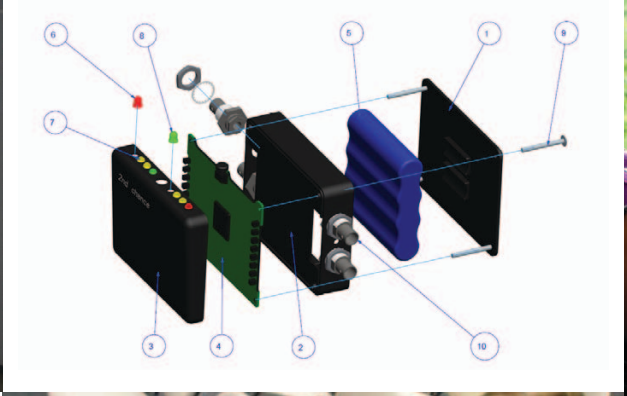
"This was such an enjoyable project due to everyone's enthusiasm and dedication, hard work and determination. Special thanks to our extraordinary coaches, at all times. To all the team at the company who provided information, gave input and feedback, a big thank you. Last but not least, our gratitude to TU Delft for hosting this year's workshop."

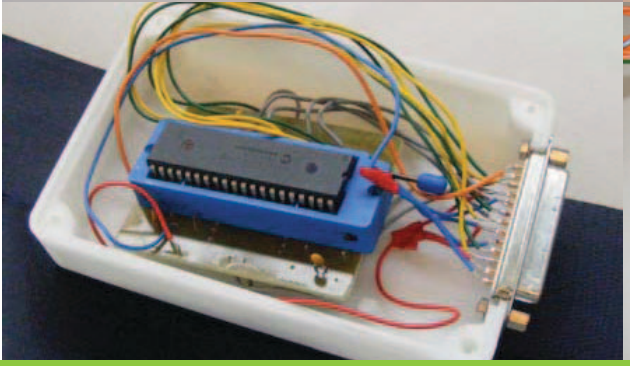
(Marko Bek, UL)

"We would like to thank to the catering staff of UMC Utrecht, whose coffee revived many comatose students. We hope at least our work served to entertain and inspire the next research years in rehabilitation."

(Janka Tirják, BME)


THE WRISTLER





2010

Toilet flushing system
Hand held blender

In 2010 the host of the EGPR course was FME from Ljubljana, Slovenia. After the first EGPR, this was the next year, where the design task was provided by two companies (BSH Nazarje and LIV Postojna). The first design problem was formulated around designing a stick blender for men. The second was limited to designing an innovative plate for toilet flushing, but the students decided to expand their task towards designing an innovative flushing system. 2010 can be considered as one of the most successful years for EGPR.

company
LIV Postojna
Kolektor LIV d.d.

company
BSH Nazarje
Bosch & Siemens Home Appliances Nazarje d.d.

workshop supporting university
University of Ljubljana
Faculty of Mechanical Engineering

"As for our project the company's contribution was really useful. They made it possible for us to visit the factory and different lectures meanwhile their professionals effectively supported our team."

(József Szabó, BME)

"The EGPR project resulted in the exploration of basic ideas in every segment of product lifecycle. The excellent work has been conducted in very limited amount of time therefore the yield of three patent applications gives us even greater satisfaction with the collaboration."

(BSH Nazarje)


1,0 m
LIV


ORKA

2011

Development of the bicycle infrastructure

Transportation with a bicycle, aligned with the requirements of sustainable development is more and more popular especially among young adults.The misson was to satisfy the explicit or implicit needs of today's or tomorrow's bikers by designing environmentally conscious products or services.

company

Direct-Line Kft.

Engineering and manufacturing company,
Dunaharaszti, Hungary

workshop supporting university

Budapest University of Technology and Economics

"With the intensive support of our staff the prototyping went well, for the final presentation all the models were ready. The presentation of the design ideas was extremely professional."

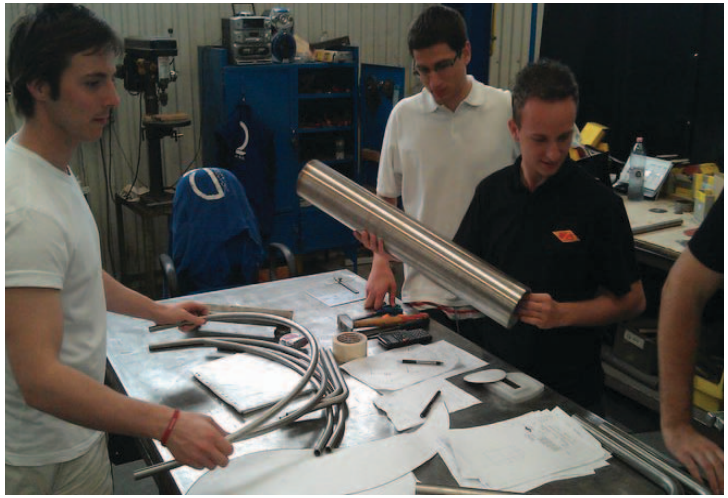
Direct-Line Kft.)

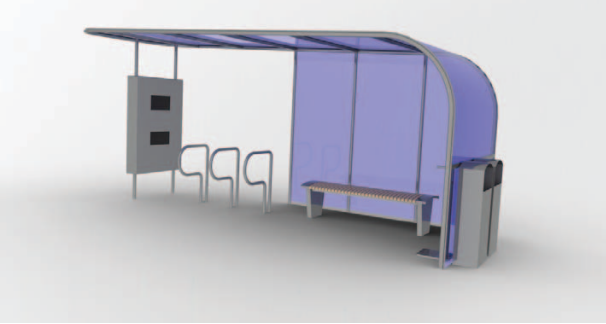
"Participating students acquire and practice skills like communication, design methods, and also professional cognition. They get used to international atmosphere, where the language of communication is English."

(Balázs Vidovics, coach, BME)

"Initially (...) we liaised only at videoconferences. Therefore it was demanding to concider deadlines, (...) harmonize ideas, and understand each other with different language skills. Still, our bicycle station was finally designed."

(Matija Brumat, UZ)





2012

Designing an innovative parasol

In 2012 the task was to create some innovative concepts for a Croatian company which produces and sells parasols. The main point was to think "out of the box" and design a parasol which could be possible products in the near or far future, based on Suman d.o.o.'s needs and opportunities.

company

Suman d.o.o.

Manufacturer and distributor of parasols in Zagreb, Croatia

workshop supporting university

University of Zagreb

Faculty of Mechanical Engineering and Naval Architecture

"What my company gets out of this project is not tangible at this stage, but it is most valuable for the future developments in my company. Showing my business partners that we are looking forward, developing new ideas and showing them the material the students produced is a major benefit my company gets out of EGPR."

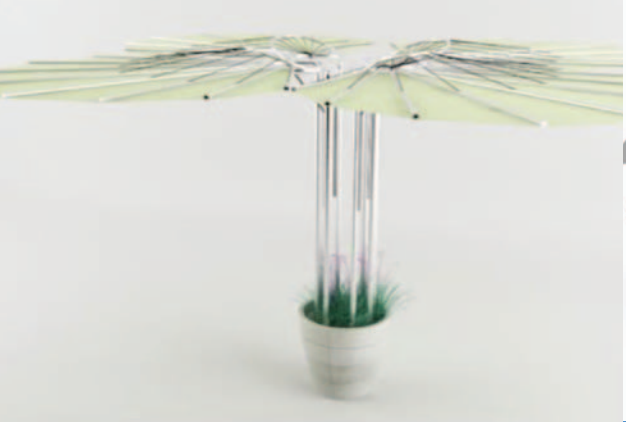
(Suman d.o.o.)

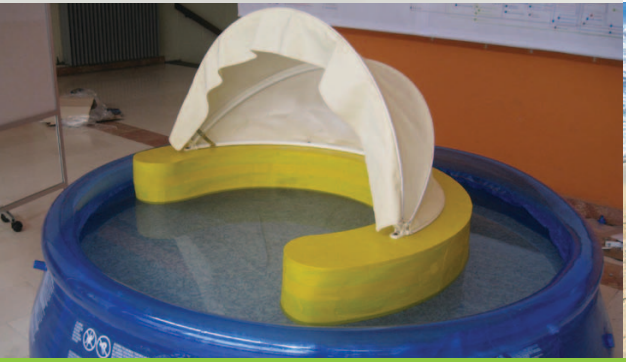
"I think EGPR is mainly useful for those who are open to development. The undertaken tasks in the project can imply development in profession, language, collaboration and human aspects. The achieved experiences are good points in work and in life, too."

(Bence Vass, BME)

"First-hand experience of online work on multinational level. On the final workshop your somewhat imaginary computer model turns into very real pile of parts which you have to put together and make it work. Very useful experience and great fun!"

(Jure Miljevič, UZ)






Suman
Suman
Suman

They said...

Feedback is essential for EGPR. You can see opinions of students and instructors about the course below.

“The project teaches the students an invaluable lesson. They learn how to behave in an industrial environment, working on a sales-driven project. It offers a glimpse of life at a multinational level, where soft skills count as much as hard data.”
(Prof. Ahmed Kovacevic, CUL)

“EGPR is a unique opportunity for our students in their Masters studies. Regardless to how many projects they have been involved before, EGPR is a big step to become a designer.”
(Balázs Vidovics, coach, BME)

“EGPR provides its students a platform for open, free thinking and yet deliver a functional product, through a structured design process. Product design study became more challenging and interesting through distance communication and virtual enterprise imitation.”
(Sham Rane, coach, CUL)

“EGPR course makes the world smaller and friendlier.”
(Nikola Vukašinovic, coach, UL)

“In a job interview they thought EGPR was one of the more meriting experiences from university.”
(Joakim Janstad, CUL)

“EGPR gave me the experience every student is looking for: the chance to work with an established company in the industry. You’ll realize that there is a lot more to engineering than the numbers, and meet great people in the process.” (Jacob Enemark, CUL)

“It was very good to join a project which solves a real life problem. Good opportunity to practise our English skills and get to know a lot of people with different aspects and cultures.”
(Peter Kerekes, BME)

“Designing with such a huge distance is really exciting. I would recommend EGPR for those who prefer challenges and would like to work with important industrial partners from the European market.” (Hajnalka Velekey, BME)

“EGPR course is a great opportunity for students to get involved in a multidisciplinary project and to get experience with working in an international team. It was a great pleasure to be part of such a great project!”
(Lovro Horvat, UZ)

“The best part was the workshop week where we met our teammates in person. At the end of the week we became really good friends.”
(Ágnes Anna Gárdonyi, BME)

For companies

You are welcome to join us if your company fits the following requirements:

- Good level of English usage;
- during preparation of the project as well as during the course at least two people must be available for negotiation, for answering the team's questions, for the company lectures and for staff meetings;
- the project must allow global research in the first phase of the project, so that the teams can collect information and form their vision;
- the initial problem must be sufficiently open, so that the teams can formulate their own specific required functionalities and design problem;
- the company must be open for a wide scope of possible solutions and innovations, be interested in an academic approach of product development and innovation;
- the company must allow research of its internal infrastructures and external connections;
- the company must leave the students sufficiently free in the development of ideas and concepts; on the other hand the students must have feedback with the company so that they will not develop solutions that are useless for the company;
- the company must provide space and technical means to accommodate the student teams and the staff for the final workshop, and to support the making of the prototypes, possibly in cooperation with an academic institution;
- the company must have the means to pay for the prototypes and one or more social events during the final workshop;
- during the final workshop sufficient technicians must be available for supporting the students.

Former partners

B/S/H/

UMC
University Medical Center
Utrecht

vlamboog
SAFETY & WELDING

Suman

Tehnix

DIRECT-LINE KFT.

LIV

niko
Železniki

Kesslers
International Ltd

Student teams 2009 - 2012

2009

Team 1 Coach: Dr. Niels CCM Moes Students: José Maas, Katalin Dóczi, Maša Zalaznik, Žan Smode, Maroje Matana, Luka Car

Team 2 Coach: Balázs Vidovics Students: Tine Lavrysen, Vanda Kovács, Gábor Brezvai, Luka Skrinjar, Janez Budic, Sasa Petrovic, Anton Racki, Mathieu Ackermann, Andrea Cabral

Team 3 Coaches: Dr. Ian Stroud, Aristeidis Matsokis Students: Marjolein Hartog, Virág Georgina Szabó, Laura Machado, Mohamed Hashi, Marko Bek, Matija Krajnc, Marko Stuglin, Blaz Razumic

Team 4 Coach: Prof. Neven Pavkovic Students: Ágnes Urbin, Barnabás Fóth, Roshan Gaind, Aleš Turel, Luka Pelko, Ivan Jukic, Bernard Martinovic, Aurélie Barras, Mehmet Emre Dincer

Team 5 Coach: Huda M. Tanvir Students: Orsolya Piroska Buza, Judit Garami, Erwin Ricky Gowree, Georges Ondoa, Matjaž Zapušek, Tomislav Vargec, Tamara Svilicic, Damir Skaljo

Team 6 Coach: Dr. Nikola Vukasinovic Students: Dóra Menich, Janka Tirják, Jurij Hladnik, Tamara Lazic, Nikola Ivancic, Tihomir Blazon, Simon Gallo, Pau Mato Sabat

2010

Team 1 Coach: Balázs Vidovics Students: Anže Novšak, Gal Letonja, Ágnes Berényi, Orsolya Nagy, Edo Alicušic, Ashwin Halai

Team 2 Coach: Prof. Neven Pavkovic Students: Gregor Povše, Jernej Marolt, Jure Penca, Tea Tadej, József Szabó, János Sófalvi, Krunoslav Antoni, Dino Ani

Team 3 Coach: Matija Kranjc Students: Gašper Kokelj, Alen Oseli, Žiga Cakš, Mónika Somogyvári, Lejla Vida, Željko Corluka, Javier Verdegver

Team 4 Coaches: Dr. Nikola Vukašinovic, Nuša Fain Students: Lovro Polh, Urban Potocnik, Klemen Francetic, Blaž Prestor, Veronika Varga, József Szabó, Vedran Grzelj, Matija Malacko

Team 5 Coach: Ida Midžic Students: Pavel Simoncic, Aleš Eržen, Metod Burgar, Georgina Ambruska, Ádám Sándor, Renato Kolar, Rouzbeh Ghazihesami

Team 6 Coach: Erwin Ricky Gowree Students: Gregor Golob, Mitja Varl, Blažka Drnovšek, Dániel Luczi, Zsuzsanna Rebi, Leo Breški, Snehal Jeshani

2011

Team 1 Coach: Dr. Ashvin Dhunput Students: Péter Molnár, Gábor Völgyesi, Christopher McLaren, Julien Marquant, Kailash Luckkana, Vaibhav Negi, Miha Sprincnik, Matija Brumat

Team 2 Coach: Balázs Vidovics Students: Anna Oszvald, Beáta Lendvai, Jeremy Mora-Monteros, Charlene Niesseron, Varun Patel, Erazem Mirtic, Denis Muhic, Matea Sapina, Anamarija Jelicic

Team 3 Coach: Dr. Nikola Vukasinovic Students: Szabolcs Bocsi, Bálint Héra, Antoine Dewarrat, William Corbett, Mark Mišic, Uroš Javh, Davor Norsic, Miroslav Mazar

Team 4 Coaches: Dr. Ian Stroud, Oliver-Ioan Avram Students: Janka Czirfusz, Andrea Kapelner, Christophe Chantre, Etienne Dalla Costa, Matic Herzog, Sebastijan Hrabar, Ivan Barisic, Dejan Devetak

Team 5 Coach: Dr. Tino Stankovic Students: Tímea Eperjesi, Bettina Szukics, Harshay Raipancholi, Ivan Yola, Jože Špehar, Pierre Robert Stare, Srdjan Crnic, Mario Horvat

2012

Team 1 Coaches: Dr. Dhunput Ashvin, Sham Rane Students: Péter Kerekes, Hajnalka Velekey, Urša Lokar, Tom Kunaver, Jacob Enemark, Joakim Janstad, Tomislav Martinec, Damjan Cakmak

Team 2 Coach: Balázs Vidovics Students: Balázs Váci, Diána Mondvai, Vid Bojnec, Jernej Rijavec, Aminullah Noori, Mohammed Sakouti, Josip Krajnovic, Matej Kovacic

Team 3 Coaches: Dr. Nikola Vukasinovic, Vanja Cok Students: Andrea Kovács, Dániel Lőrincz, Blaž Žugelj, Žiga Gregor Turšic, Amir Hosseinpour, Mohammad Arjeneh, Krunoslav Seset

Team 4 Coach: Dr. Tino Stankovic Students: Ágnes Gárdonyi, Anikó Bartók, Borutcerne, Jure Pleško, Ishani Parbhoo, Karim Elrify, Daria Curko, Martina Grgic

Team 5 Coaches: Dr. Ian Stroud, Prof. Neven Pavkovic Students: Noémi Bakó, Bence Vass, Jure Miljevic, Aljaž Nedog, Samuel Mensah, Yasser sheikh, Lovro Horvat

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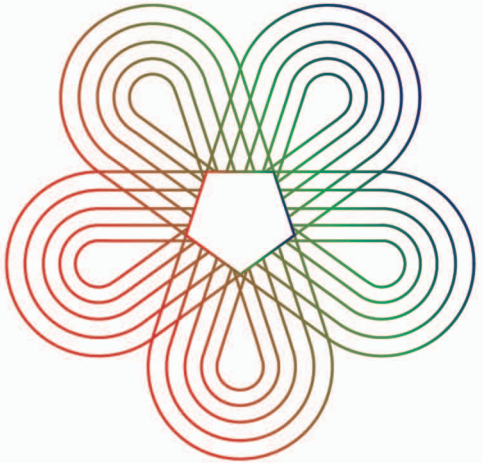

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