

Lecturers



Prof. Christopher Brown
Faculty of Mechanical Engineering
Worcester Polytechnic Institute
Worcester, MA, USA



Asst. Prof. Erwin Rauch
Free University of Bolzano
Faculty of Science and Technology
Bolzano, Italy

Local experts & tutors



Prof. Helmut Zsifkovits
Chair of Industrial Logistics
Montanuniversität Leoben
Leoben, Austria



Ing. Luca Gualtieri
Free University of Bolzano
Faculty of Science and Technology
Bolzano, Italy



Dr. Carlos Meisel
Universidad de Ibagué
Director of Industrial Engineering
Ibagué, Tolima, Colombia



1st International Summer School on Axiomatic Design.

Introduction to Axiomatic Design for the Design of Complex Systems.

23-25 July 2019

Worcester Polytechnic Institute
Fuller Labs- Perreault Hall – Lower Section
with live connection to international partner institutions



The project has received funding from the European Union's Horizon 2020 research and innovation program under the Marie Skłodowska-Curie grant agreement No 734713.

Registration:

Asst. Prof. Erwin Rauch
Free University of Bolzano
erwin.rauch@unibz.it

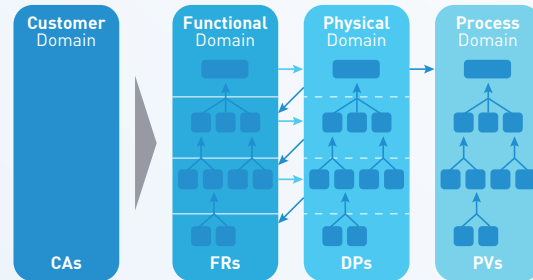
Credits:
2 ECTS

Program of the Summer School

Learn and practice Axiomatic Design in 2.5 days.

8 hours of Lecture:

1. Introduction in Axiomatic Design (AD)
2. Domains in AD
3. Customer Needs
4. Functional Requirements
5. Design Parameters
6. Process Variables
7. Constraints
8. Independence Axiom
9. Information Axiom
10. Design Matrix
11. Decomposition and Mapping process
12. Metrics in AD
13. Practical examples and case studies regarding the use of AD in product development, mechanical engineering, healthcare and manufacturing systems design.



12 hours of case study elaboration in small groups.

Objectives and target group for the Summer School

Any changes should be supported by good planning, for the physical and organizational aspects as well as the implementation and execution. This planning is a process that should be addressed efficiently and creatively by advanced, scientific methods for engineering design.

Axiomatic Design (AD) is the only truly scientific method for solving engineering design problems because it is governed by two basic Axioms, maintaining independence and minimizing information content. Together these axioms guarantee the selection of the best and most successful design solution. It will be the most robust, adjustable, and controllable solution, and it will avoid unintended consequences. AD originated with Nam Suh at MIT in the late 1970s. It is used by advanced engineering designers around the world.

The fundamentals of axiomatic design are reviewed, with insights and perspectives of over 30 years of teaching and practice. The latest methods for using AD, qualitatively and quantitatively, for selecting the best design solutions and for fostering innovations are presented. AD can add value and reduce costs in designs and in the design process. Emphasis is placed on techniques for decomposing design problems into valid, corresponding functional and physical hierarchies, and using metrics, to facilitate rigorous application of the axioms.

This short course is intended for engineering students of all levels, engineers, technology managers and anyone involved with designing, planning and implementing changes in manufacturing processes and systems, who might have never used Axiomatic Design, or who would like a fresh perspective.

Lecture	23.07.19		24.07.19		25.07.19	
case study	AM	PM	AM	PM	AM	PM
USA	8:30am - 12:30pm	1:30pm - 5:30pm	8:30am - 12:30pm	1:30pm - 5:30pm	8:30am - 12:30pm	
Colombia	7:30am - 11:30am	12:30pm - 4:30pm	7:30am - 11:30am	12:30pm - 4:30pm	7:30am - 11:30am	
Europe		2:30pm - 6:30pm	9:00am - 1:00pm	2:30pm - 6:30pm	9:00am - 1:00pm	2:30pm - 6:30pm