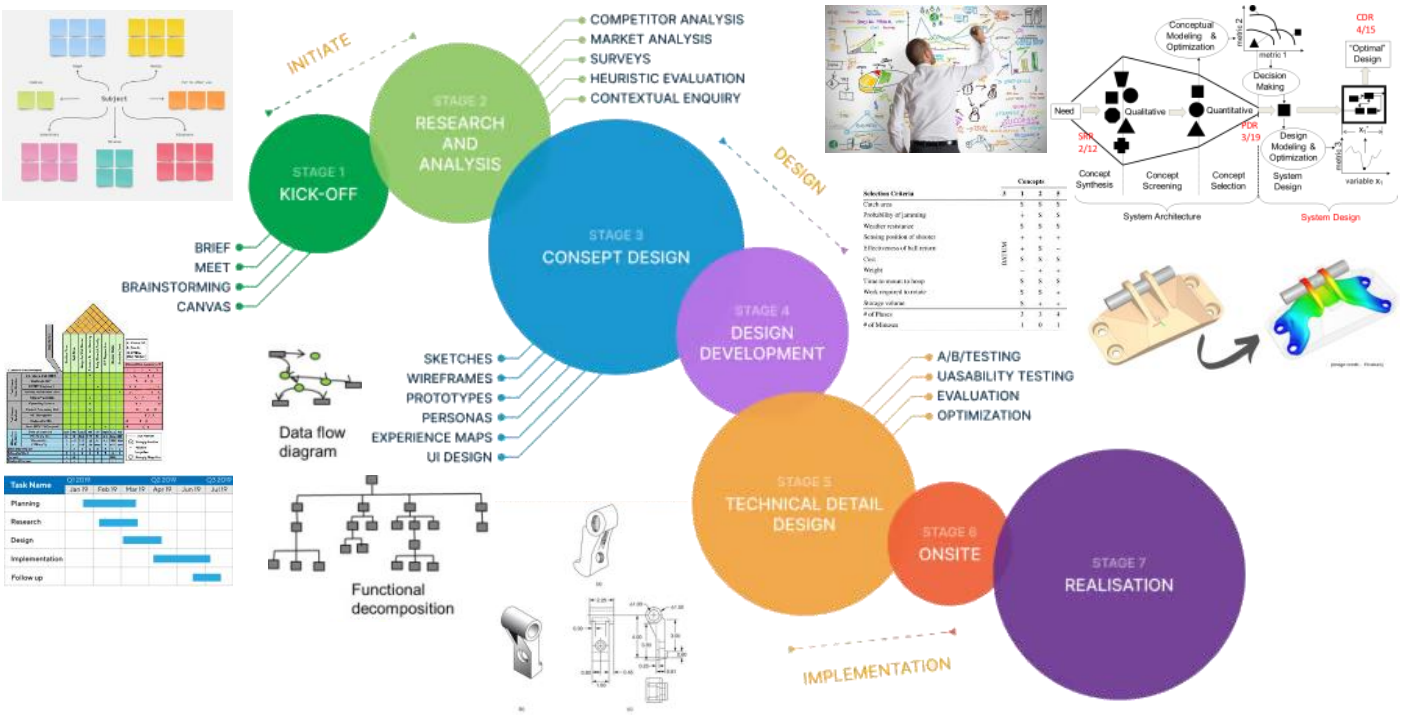
IIAS Indian Institute for Autonomous Systems

ONE-DAY WORKSHOP ON ENGINEERING DESIGN



Workshop Details

Schedule and Type:	Dec. 21, 2025, Sunday; Instructor led interactive + demo + QA
Workshop Duration:	5 Hours, online, 1 day
Conduction Mode:	Online:10:00 AM-5:00 PM with a half an hour break for each one hour session
Attendee Background:	Mechanical, Automotive and Aerospace
Instructors:	Dr. Prashanth Dalawai
Registration Link:	www.iias-uv.in/services/training/workshops/
Registration Deadline:	Dec. 20, 2025

Workshop Objective

The engineering design is the systematic process engineers use to solve problems by combining science, math, and creativity to develop new products, systems, or processes. This iterative process involves steps like defining the problem, brainstorming solutions, building a prototype, and testing to create a final product that meets specific requirements and constraints. The engineering design process includes identifying the problem, researching, specifying requirements, brainstorming, selecting the best solution, designing the solution, building a prototype, testing and evaluating and improving the solution. A successful designer needs a a strong foundation in fundamentals and honing crucial soft skills of practical problem-solving.

IIAS training division offers an advanced training program and workshop by providing both theoretical, computational and hands-on testing foundations and real-world case studies on automotive, aerospace and heavy engineering and other rotating machinery. These programs concentrate more on the faster adaptation of technology to the respective industries and reduce the training curve. This workshop is designed carefully to give the essential fundamentals as well as practical implementation skills through real case studies. The instructor has decades of experience in designing a verity of products in industry and teaching design courses near a decade. Both the fresh engineers and practicing professionals can benefit from this workshop.

Workshop Content

Fundamentals of Engineering Design: Duration (Hrs.):06

Sl.	Topic	Date
1	**Introduction:** Engineering design process, ways to think, considerations of good design, description of design process, computer aided engineering, designing to codes and standards, design review, innovation and the design process. Case studies.	10:00AM
2	**Need identification and product planning:** Problem definition, customer needs and requirements, product planning, solution finding methods, selection, and evaluation, solving process, flow of work, effective organization structures. Case studies.	11:00AM
3	**Conceptual design and evaluation :** Creativity and problem Solving, creativity methods, Theory of Inventive Problem Solving (TRIZ), conceptual decomposition, generating design concepts, axiomatic design, evaluation methods. Case studies.	12:00PM
4	**Embodiment and Detail Design:** Product architecture, configuration design, parametric design, best practices, industrial design, design for X, production drawings, final design review, Product Life cycle Management (PLM). Case studies.	03:00PM
5	**Advances in engineering design:** Computational and simulation methods (FEA, CFD, and AI/ML in design), advanced materials and manufacturing (additive manufacturing, nanotechnology, and composites), and system-level design and optimization (smart grids, process integration, and digital twins). Case studies.	04:00PM

Reference: Engineering Design, George Dieter and Linda Schmidt, 5th Edition, McGraw Hill Intl. 2012.

Contact Us

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