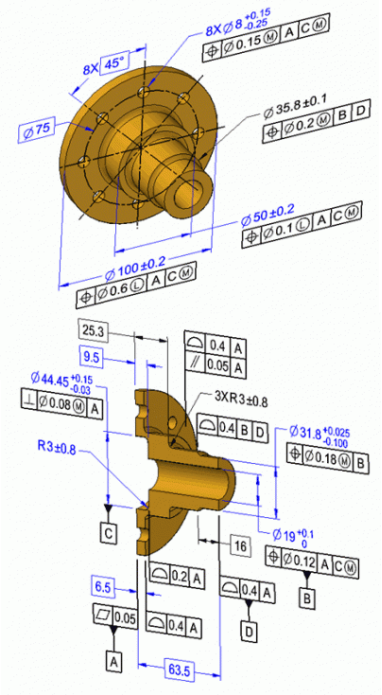
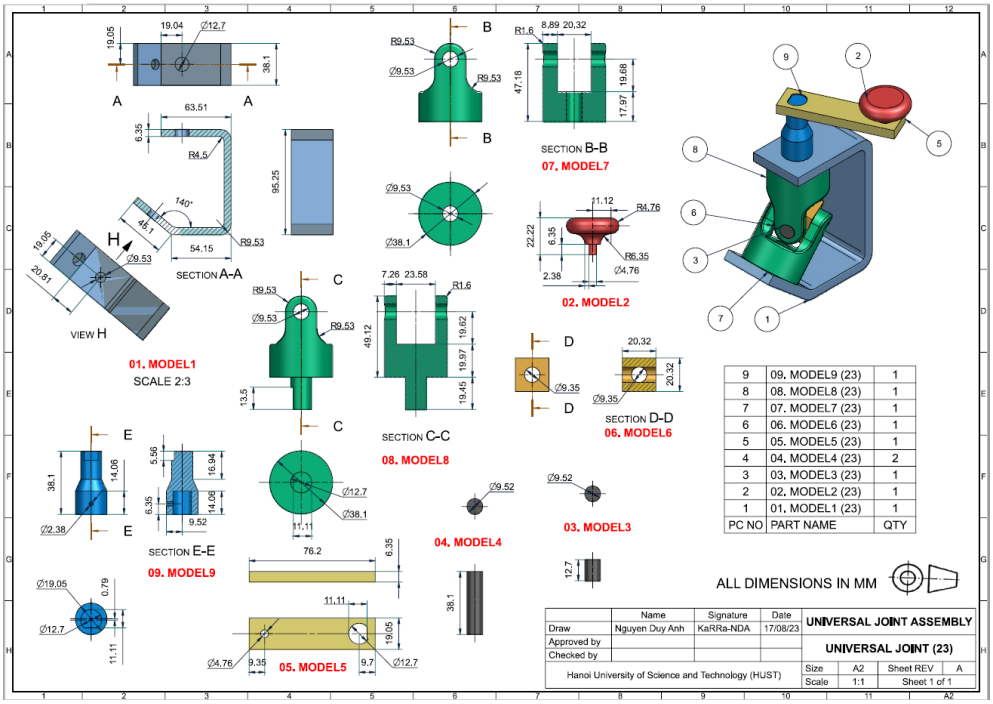
IIAS Indian Institute for Autonomous Systems

HANDS-ON WORKSHOP ON PARAMETRIC DESIGN





Workshop Details

Schedule and Type:	Jan. 03 to Jan. 31, 2026; Instructor led interactive + demo + QA + hands-on practices
Workshop Duration:	50 Hours (10 hours online for foundation, 40 hours offline for hands-on practices), 1 month
Conduction Mode:	Online:10:00 AM-12:00 PM on working days; flexible timing slot based on batch request
Attendee Background:	Mech., Automotive, Aerospace and Robotics
Instructors:	Dr. Prashanth Dalawai
Registration Link:	www.iias-uv.in/services/training/workshops/
Registration Deadline:	Jan. 03, 2026 and limited seats avalible

Workshop Objective

The design is an integral part of every system. Most often, it is the various activities to satisfy a recognized need of society, after the plan to create and balance parameters between the functional requirements and constraints. An engineering design extends well beyond the boundaries of science to seek optimality for the entire life cycle utility of product systems. A good design must fulfil both analysis and synthesis. So, a successful designer needs to embed the design intents clearly in every stage. Parametric modeling captures design intent using features and constraints, and allows designers to automate repetitive changes, ensure families of products, unlike direct modeling that simply pushes and pulls the geometry till the required shape.

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. The current workshop is carefully designed to give the essential fundamentals as well as practical implementation skills through the instructor, who has decades of experience in teaching and designing a variety of products in the industry.

In this workshop, the participant will learn the fundamentals of design, creation, reuse existing geometry and modify design models using advanced sketching techniques and feature creation tools. After workshop completion, the participant will be well prepared to work efficiently with complex product designs using the leading and latest PTC Creo Parametric. Creo is used for various industries like mechanical, automotive, aerospace, and consumer for 3D modeling, product development and generative design. It supports manufacturing processes like tooling design and 3D printing, and features like augmented reality (AR) and model-based definition. The graduating and fresh engineers, as well as practicing professionals, can benefit from this workshop. The fresh engineers can get ready for the industry and take career assistance support.

Workshop Content

Fundamentals of Mechanical Design: Duration (Hrs.):10

Sl.	Topic	Date
1	**Introduction:** Purpose of the design and drawing, types of drawings-schematics, sketches, charts, block diagrams and graphs; Component and assembly drawings; Production drawings - detail, assembly and installation.	Jan. 03
2	**Dimensioning conventions:** Geometric dimensioning, limits, tolerances and fits.	Jan. 05
3	**Components of production drawings:** Drawing template, isometric and orthographic drawing views, GD&T symbols, dimensions angle projection, bill of material; Conventional representation of materials, surface roughness, notes, scale, unit and manufacturing or assembly process sheet, reference.	Jan. 06
4	**Machine elements:** Terminology, conventional representation of fasteners, threads, bolt, washer and nut; shaft, couplings, and keys; riveted and welded joints, bearings, chains and gears, assembly drives and applications.	Jan. 07
5	**Blueprint reading :** Reading of components drawings, assembly drawing and production drawings.	Jan. 08

Hands on Design with Creo Parametric: Duration (Hrs.):40

Sl.	Topic	Date
1	Computer Aided Design (CAD)	Jan. 09
2	Introduction to 3D modeling and design	Jan. 10
3	Sketcher	Jan. 12
4	Extrusions	Jan. 13
5	Revolves	Jan. 14
6	Patterns	Jan. 15
7	Parametric & freestyle surfacing	Jan. 16
8	Sheet metal design	Jan. 17
9	Piping & cabling design	Jan. 19
10	Dimensioning	Jan. 20
11	Engineering drawings	Jan. 21
12	Assemblies	Jan. 22
13	Assembly drawings	Jan. 23
14	Relations and family tables	Jan. 24
15	Tolerancing and GD&T	Jan. 26
16	Design exploration	Jan. 27
17	Human factors design	Jan. 28
18	Mechanism design	Jan. 29
19	Creo simulate and FEA	Jan. 30
20	Legacy data migration	Jan. 31

Slots are flexible based on the batch request and resource availability.

Workshop Closure

Sl.	Topic	Date
1	Assessment and feedback, issuing of certificates and concluding the workshop.	Jan. 31

About IIAS

IIAS (Indian Institute for Autonomous Systems) is set up primarily to fill the gap between academia and industry in the development of machines, unmanned vehicles and autonomous systems, allied technologies, and to create a related skilled workforce. IIAS have personnel with extensive expertise in serving the leading industries and academia in the cutting-edge technologies. IIAS is located in the heart of the city with modern teaching aids, facilities, and resources for both creating and deploying design, analysis and control solutions for the machinery and vehicles.

About Instructor

Dr. Prashanth Dalawai has 30 years of experience in the R&D sectors of leading Indian and multinational companies and in a few of the oldest institutes in India. He holds a B.E. in mechanical from Karnatak University, M.Tech., and a Ph.D. in mechanics and design stream from IIT Kanpur in NVH techniques for controlling vehicle and engine health (IVHM).

He is serving as the founding director of IIAS. He served the leading MNCs such as AVL List GmbH, Cummins Inc., General Electric and Indian OEM in different roles, as well as automotive, aerospace and heavy engineering clients. He also served as the UGC approved faculty in the mechanical department and founding head of the aerospace engineering.

He has taught CAD, drawings, and machine design to the undergraduates for successive years. In his industrial and academic research career, he has extensively designed a variety of products and optimized for the required weight, strength and performance profiles, and mentored projects.

Contact Us

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