

**ONLINE TRAINING-CUM-INTERNSHIP PROGRAM
POWERED BY UGCPL**

SOLIDWORKS

Important information related to online Training-cum-Internship Program

- ✚ On registration confirmation, a common whatsapp group will be formed, where the students will be getting all necessary updates including the joining link (MS Teams / Google Meet) for online sessions.
- ✚ Two-hours online session on alternate-day-basis will be held from 3.00 pm to 5.00 pm (A minimum of 30 Hrs in one month and a minimum of 50 hours in 45 days). Timing schedule may change on request of majority of the participants
- ✚ 25 % of the allocated time will be for real time project work implementation.
- ✚ Project work will be in group of students (group will be consisting of a maximum of 8 students).
- ✚ Submission of complete project report by the participant is mandatory for the Internship Certification–One copy of the project report needs to be submitted at the parent Institution/Department and another copy will be required to be submitted to UGCPL.
- ✚ Upon submission of project report in the concerned parent Institute/Department, the participants will be able to download their Internship Certificates within 10 working days from our website (www.ugcpl-india.com). The hard copy of the certificates will be submitted to the T&P Cell of the concerned University/Institute on request within 20 days time period.
- ✚ After successful completion of Training-cum-Internship program, students may submit their copy of certificate along with their updated resume/CV online to UGCPL by e-mail for availing *lifetime free campus placement opportunities* offered by UGCPL.
- ✚ The participants will have to make their own arrangement of resources like Laptop or PC or smart phone and internet connectivity for attending the sessions through MS Teams/Google Meet platform.

Course Structure/Schedule of the Training-Cum-Internship on

SOLID WORKS

About Solid Works: SolidWorks is a 3D CAD program developed by Dassault Systems, France. SolidWorks is currently used by over 1.3 million engineers and designers at more than 1,30,000 companies worldwide. There are over 1.5 million licenses of SolidWorks worldwide. The user base ranges from individuals to large corporations, covering a wide cross-section of manufacturing market segments. SolidWorks partners with third party developers to add functionality in niche market applications like finite element analysis, circuit layout, tolerance checking, etc. This covers from design and validation to technical communications and data management. The intuitive design interface and integrated software work together to give the user the freedom to focus on innovation. SolidWorks can maximize the productivity of your design and engineering resources to create products better, faster, and more cost effectively.

Pre-requisites: Anybody interested in SolidWorks can take this training. Though basic knowledge of engineering drawing will be a plus point.

Expectation & Goals

:SOLIDWORKS:

❖ **Module 1**

- Introduction of Solidworks.
- Its application, advantage, uses.
- Concept of part design and plan selection for sketch design.
- Some example of
 1. Line
 2. Circle
 3. Rectangle
 4. Spline
 5. Ellipse
 6. Pattern (Circular/Rectangular)
 7. Trim
 8. Mirror
- ◆ Some Assignment .

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❖ **Module: 2**

Concept of 3D design

- Example of:
1. Extrude
 2. Revolve
 3. Sweep
 4. Loft
 5. Extrude Cut
 6. Revolve Cut
 7. Sweep Cut
 8. Lofted Cut
 9. Pattern (Circular/Rectangular)

Some Assignment .

❖ **Module: 3**

Concept of Assemble design.

1. Function of Mate.
2. Exploded view of 3D modelling.
3. Function of Mechanical Mate
Such as; Gear, Cam, Screw, etc.
Some Assignment.

❖ **Module: 4**

- Function of Convert Entities especially for Bevel gear and helical gear design.
- Concept of Drafting of 3D design.
- Drafting page setup and different type of view 3D modelling.
- Some Assignment.

❖ **Module: 5**

- Mechanical 3D machine part design for practise.
- Concept of Static Analysis:
 1. Stress Analysis.
 2. Thermal Analysis.
 3. Drop test Analysis.
 4. Buckling Analysis.
 5. Frequency Analysis.Doubt clear.

❖ **Module: 6**

Concept of flow analysis

1. Internal water flow analysis.
 2. External water flow analysis.
 3. External air flow analysis.
- Doubt clear and practise.

❖ **Module: 7**

Project selection of each group:

There are two types of project;

1. **Solid 3D machine part of any machine parts.**
Such as, Lathe machine, Milling machine, Drill machine, etc
and also mechanical joint such as, Knuckle joint, Universal joint, Flange coupling, etc.
2. **Water/Air flow analysis of mechanical object.**
Such as, Internal water flow analysis of a pump.
Internal water flow analysis of a ball valve.
External air flow any object.