

**G. PULLA REDDY ENGINEERING COLLEGE (Autonomous): KURNOOL
DEPARTMENT OF MECHANICAL ENGINEERING**

**3-DAY WORKSHOP ON
“GEOMETRIC DIMENSIONING AND TOLERANCING”
(10th to 12th November, 2021)**

Event Details

Name of workshop: 3-DAY Workshop on Geometric Dimensioning and tolerances

Name of the speakers:

1. Mr. Srinivas Boligarla Chief Consultant Engineering & Industrial services Hyderabad
2. Mr. Devender Reddy Pachika Consultant Engineering & Industrial services Hyderabad

Date of Workshop : 10th to 12th Nov 2021, No of hours 30 Hours

Number of Participants: 110 students + 4 Faculties

Objectives of Workshop: To understand the concept of GD & T in engineering field.

Outcome of Workshop:

Students will be able to

- Read the actual industrial drawings and understand the different dimensions provision in Industrial Engineering Drawing sheet.
- Understand the tolerances provision for any assembly component

Event description:

Mechanical Engineering department of G. Pulla Reddy Engineering college has organized a Three-day workshop for mechanical engineering students on “Geometric Dimensioning & Tolerances”. In association with IEI students’ chapter of mechanical engineering and Engineering and Industrial services Hyderabad. The aim of the workshop is to make students aware about basic concepts of geometric dimensions & tolerances provided in engineering drawing of industries

The workshop started with welcoming guest by Head of the Department Dr. Y.V.Mohan Reddy and few encouraging words about the current scenario in industry. The workshop was divided in two session, in first session Mr. Srinivas Boligarla has presented and explained to students about tolerances and how to read engineering drawings. In second half session Mr.

On third day evening the workshop was concluded by proposing Vote of thanks and certificates were distributed to students

Registration link -
<https://forms.gle/AAZEmNz4r7p3xtHG6>
Content and Syllabus for workshop

Basic GD&T, per ASME Y14.5 – 2009

(3 days, 30 hrs, timing 8:00 to 18:00 hrs)

1. Pre assessment test
2. Tolerance, why tolerance is required, and how tolerance is decided.
3. History, Introduction and understanding the need for GD & T.
4. Advantages of GD & T over conventional limit tolerancing.
5. Fundamental rules of GD&T per ASME
6. Coordinate VS geometric tolerancing.
7. Definitions of Terms and Symbols
8. Feature definitions, size feature, FOS and surface feature.
9. Rule#1 or **Taylor principle** or envelop principle
10. Definition of material/feature and datum modifiers, RFS, MMC, LMC, **MMB**, **LMB**, **RMB**
11. DRF and FCF
12. Definition of datums' and DOF restrained by primary, secondary and tertiary datums.
13. Constrained DOF for different types of primary datums
14. **Selection of datums** based on design intent / manufacturing requirements.
15. **Datum Qualifiers**
16. Datum **simulators** for different types of datum features
17. Tangent plane application
18. Partial datums
19. Statistical tolerance symbol and use
20. Form tolerance and their application
21. Renegades of form tolerances
22. Orientation tolerances and application
23. Tolerance concepts, MMC / LMC / RFS and their applications
24. Calculation of bonus tolerance per MMC / LMC
25. Position tolerances and application
26. Run out tolerances and application
27. Profile tolerances and application
28. Summary of all geometric symbols
29. Inspection methods of all geometric tolerances

30. Animations for form tolerances and some important concepts
31. Exercises throughout the work shop, over 35nos
32. Discussion on actual parts/prints brought by participants.
33. Final tests on proficiency and application of GD & T

Salient features of the training

1. **Trainer:** Experienced trainer with core and service industry experience.
2. Hands on experience on stack-up analysis of complex assemblies for auto sector.
3. **Training material:** Over 60 pages of PDF material will be given to all participants.
4. **Exercises:** Several exercises over 30nos for each training
5. **Training assessment:** Pre, and post assessment tests will be conducted.
6. **Delrin / wood prototypes:** Part/assy are used for effective training, GD&T
7. **Examples:** Illustrations/sketches and practical examples drawn from the industry.
8. **Animations:** Animations will be shown for clarifying the GD&T concepts.
9. **Design optimization using software:** 1D analysis by Visual Basic and spread sheet
10. **Case studies:** to be executed at home by the participants during training.