

AT8011 AUTOMOTIVE TESTING

DETAILED SYLLABUS

OBJECTIVES:

- To introduce the learners with the need for automotive testing methods and their importance.
- To equip them with knowledge in various testing standards and guidelines.

UNIT I VEHICLE WIND TUNNEL TESTING AND BODY TESTING

Wind tunnel test requirements - Ground boundary simulation - wind tunnel selection and Reynolds number capability, model details, mounting of model, Test procedure. Body test - Dynamics simulation sled testing - Dolly roll over test - Dolly roll over fixture - vehicle roof strength test - Door system crash test.

UNIT II COLLISION AND CRASH TESTING

Crash testing: Human Testing, Dummies, Crash worthiness, pole crash testing, near crash testing, vehicle to vehicle impact, side impact testing, crash test sensor, sensor mounting positions, crash test data acquisition, braking distance test.

UNIT III TESTING OF WHEELS AND BRAKES

Wheels: Dynamic cornering fatigue, dynamic radial fatigue tests-procedures, bending moment and radial load calculations. Impact test -Road hazard impact test for wheel and tyre assemblies test procedures, Failure criteria and performance criteria.

UNIT IV ENERGY AND FUEL CONSUMPTION TESTING

Engine cooling fan, air conditioning and brake compressors, hydraulic pumps power consumptions, ABS energy consumption. Test Route selection, vehicle test speeds, cargo, weights, driver selection, Tested data, finding and calculations. Test on rough terrain, Pot hole with laden and unladen conditions.

UNIT V VEHICLE COMPONENT RELATED TESTING 9

Reading - longer texts - close reading, writing - brainstorming - writing short essays - developing an outline - identifying main and subordinate ideas - dialogue writing. Listening - listening to talks - conversations. Speaking - participating in conversations - short group conversations. Language development -modal verbs-present/post perfect tense. Vocabulary development - collocations.

REFERENCES:

1. Beck with. T.G. and Buck. N.L. "Mechanical Measurements", Addition Wesley publishing company Limited, 1995.
2. SAE Hand book, Vol 3, SAE, Publications, 2000
3. Tim Grilles, "Automotive Service" Delmar publishers, 1998

Diploma, Anna Univ UG & PG Courses

Notes

Syllabus

Question Papers

Results and Many more...

Available @

www.AllAbtEngg.com

4. W.H. course& D.L. Anglin, "Automotive Mechanics" TMG publishing company, 2004

5. Automotive Handbook, Bosch.

Website: [www.mainindia.com/Draft, AIS standards. asp.](http://www.mainindia.com/Draft_AIS_standards.asp)