

# NOC:Experimental Stress Analysis , An Overview - Video course

## COURSE OUTLINE

Experimental methods exploit a particular physical phenomenon to make measurements and hence only certain information that can be recorded by an experimental technique. The course introduces the physical principle used by various experimental techniques and also provides a guideline to select an experimental technique for a given application. The role of analytical, numerical and experimental methods in solving a problem in solid mechanics is discussed. Stress and strain at a point is discussed in most courses on solid mechanics but little attention is paid on the variation of these quantities over the field of the model. Attention is drawn on the richness of whole field information provided by most of the optical techniques.



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## Mechanical Engineering

### Pre-requisites:

Strength of Materials/Introduction to Mechanics of Solids

### Additional Reading:

1. Springer Handbook of Experimental Solid Mechanics, W.F. Sharpe (Ed.) Springer, USA, pp. 701-742, 2008. ISBN 978-0-387-26883-5
2. e-book on Experimental Stress Analysis, K. Ramesh, Published by IIT Madras, India, July 2009. ISBN: 978-81-904235-6-4
3. Experimental Stress Analysis , An Overview, K. Ramesh, in Optical Methods for Solid Mechanics , A Full-Field Approach, , Pramod Rastogi and Erwin Hack (Eds.), Wiley ,VCH Verlag & Co., Germany, , pp.

141-181, 2012. ISBN:  
978-3-527-41111-5.

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