

**School of Engineering, IIT Mandi**  
**Second Semester, 2018-2019**

**Selected Topics in Elasticity (ME 591) 1-0-0-1**

**Course Co-ordinator :** Gaurav Singh (gsingh@am.iitd.ac.in)

**Distribution of lecture hours :**

|                                                                                                                          |               |
|--------------------------------------------------------------------------------------------------------------------------|---------------|
| Theory of stress & small strain                                                                                          | 6.0 hrs       |
| Linear elasticity + Thermo-elasticity                                                                                    | 2.0 hrs       |
| Problem formulation (stress and displacement), Boundary conditions, Principle of superposition, Saint-Venant's principle | 1.5 hrs       |
| Strain energy, Uniqueness of elasticity BVP                                                                              | 1.5 hrs       |
| Plane strain and stress, Airy stress function                                                                            | 1.0 hrs       |
| Principle of virtual work, minimum potential energy                                                                      | 2.0 hrs       |
| <b>Total</b>                                                                                                             | <b>14 hrs</b> |

**Book :**

Elasticity : Theory, Applications, and Numerics by Martin H. Sadd, Academic Press (3e)

**Evaluation :**

One 30 min closed-book examination