



# ***TXL 211 Structure and Physical Properties of Fibers***

## **2<sup>nd</sup> Semester 2021-22**

**Course Coordinator**

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## **Lectures (D Slot)**

**Tuesday 9:00 – 10:00 AM**

**Wednesday 9:00 – 10:00 AM**

**Friday - 9:00 10:00 AM**

**Online platform**

**MS Team (Lectures)**

**Moodle / Impartus (Resources)**



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## **Course Evaluation**

**Course is divided in two parts:**

**Part (A) – 50 Marks – Quiz+Minor (RKS)**

**Part (B) – 50 Marks – Quiz+Major (BN)**

**In case of absentia from any quiz or examination, you will NOT be allowed to re-take the quiz or examination.**

**This will be exempted only if there is a serious medical emergency. You have to inform the coordinator on the date of quiz/exam by email before the start of quiz/exam. If you fail to send the email no consideration will be given later. You need to produce a medical certificate as early as possible.**

**Audit Policy – Audit pass grade is given for 30% or higher marks, however you also need to attend all the quizzes/examinations to be considered for audit pass.**



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## **Course Content**

- ☐ **Polymers**
  - ☐ Molecular architecture, configuration and conformation, amorphous and crystalline phases, plasticization, crystallization, glass transition and melting, factors affecting  $T_g$  and  $T_m$
- ☐ **Basic structure of fiber**
  - ☐ Orientation, molecular entanglements, fiber formation in thermoplastic polymers, methods of investigating physical structure of fibers (FTIR, DSC, TGA, DMA/TMA, Birefringence, Sonic Modulus, WAXD, SAXD)
- ☐ **Moisture absorption, viscoelasticity, mechanical, optical, electrical and thermal properties of fibers**

## **Text Book**

**Physical Properties of Textile Fibers by  
Morton and Hearle**