

# GUJARAT TECHNOLOGICAL UNIVERSITY

## Rubber Technology B. E. SEMESTER: VI

Subject Code:162603

Subject Name: **Rubber Equipment Design - I**

Sr. No.	Course Contents	Total Hrs
1.	<b>Design of Mixing Equipments: -</b>  Mixing mills & internal mixer, Control of mixing newer methods including continuous mixing, relative merits & their uses, Design aspects of mixing mills & internal mixers, automation controls, dispersion requirements & characteristics, Safety-human aspects, machine aspects, Mixing equipments lay-out, organization & capabilities, Capital & running costs of various systems, Exercises in design & drawing of mixing mills.	20
2.	<b>Design of Hydraulic Press:</b>  Major components, Process design & Mechanical design, part design.	10
3.	<b>Design of Calendering Machines:</b>  Process controls. Temp. Controls by use of cold water, hot water, steam etc, centrally & peripheral drilled rolls, control of product thickness, non-Newtonian behaviors of rubber comp. methods used for thickness control, Roll design, Calculation of roll separating force, Calculation of roll deflection, Specification of calender machine.	14
4.	<b>Design of Autoclave:</b>  Major components, Process design & Mechanical design.	10

### Practical:

It should be based on theories.

### Text Books:

1. Rubber Products Manufacturing Technology -By: Anil K. Bhowmick
2. Mixing of Rubber -By Groosmen

### Reference Books:

1. Rubber Processing & Production Organisation -By: Philip K. Freakley.
2. Calendering & Extrusion Technology -By: Arun V. Apte.

