

# GUJARAT TECHNOLOGICAL UNIVERSITY

## PLASTIC TECHNOLOGY

### B. E. SEMESTER: VII

Subject Name: **Adhesives and Sealants (Department Elective - 1)**

Subject Code: **172306**

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam (E)		Mid Sem Exam (Theory) (M)	Practical (Internal)
				Theory	Practical		
4	0	2	6	70	30	30	20

Sr. No	Course Content	Total Hrs.
1.	<b>Fundamentals of Adhesives: -</b>  Introduction to Adhesives, the role of Adhesives in the economy, fundamentals of adhesion, surface preparation for adhesion bonding, adhesive selection and screening.	06
2.	<b>Natural Adhesive Materials:</b>  Animal glue, casein and mix protein adhesives, starch base adhesives	04
3.	<b>Rubber Base Adhesive Material:</b>  Natural rubber adhesive, butile rubber and polyisobuteline, nitrile rubber adhesive, styren butadiene rubber adhesive, thermoplastic rubber in adhesive, carboxylic polymers in adhesive, neo prene based solvent and latex adhesive, polysulfide sealant and adhesives.	12
4.	<b>Resin Based Adhesives:</b>  Phenolic resin adhesive, amino resin adhesive, epoxy resin adhesive, Polyurethane & isocyanate based adhesive,	06
5.	<b>Polyvinyl Based Adhesive:</b>  Polyvinyl acetate emulsions for adhesives, polyvinyl alcohol for adhesives, polyvinyl acetal adhesive.	06

6.	<b>High Performance Based Adhesive:</b>  polyester and polyamide high performance hot melt adhesives, high temperature organic adhesives, silicone adhesives sealants and abrasives, organofunctional silane coupling agents, non-silane coupling agents, resins for elastomer based adhesives, polyolefin and ethylene copolymer based hot melt adhesives, acrylic adhesives, anaerobic adhesives, cyanoacrylate adhesives.	08
7.	<b>Bonding Technology:</b>  Bonding plastics, bonding textiles to rubber, bonded adhesives.	04
8.	<b>Adherends And Bonding Technology:</b>  Wood adhesive, sealants and caulks, pressure sensitive adhesives for taps and labels, coated abrasives	04
9.	<b>Adhesives For Industrial Application:</b>  Adhesives for building construction, adhesives in electrical industry, conductive adhesives, structural adhesives in aerospace industry, adhesives in automobile industry, Meter, Mix & dispersing equipments-basic design, robotic dispersing of sealants and adhesives,	06

### **Text Book:**

1. Handbook of adhesives (Third edition) by Irving Skeist  
(Publication- VAN NOSTRAND REINHOLD, NEW YORK)