Bloom's Taxonomy Levels: 1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

Programme Name: B.E. (Textile Engineering) and B.E. (Textile Technology)

Programme Specific Outcome (PSO)

1. Graduates of the program will have the ability to apply knowledge of Basic science, engineering and Textile Engineering in identifying and providing appropriate solution to problems of textile engineering/technology industry.
2. Graduates of the program will have the ability to design, optimize textile process and Textile machinery to develop quality and cost effective products.
3. Graduates of the program will have successful career in machine design, erection, commissioning and maintenance of textile machines and technical sales segment of textile engineering/technology industry.
4. Graduates of the program will have the continual learning ability and will be adapting to the constantly changing technology.
5. Graduates of the program will have necessary skills to take up Entrepreneurial Venture.
6. Graduates of the program will serve to the needs of Textile Industry and the Nation.
7. Graduates of the program will be able o enhance skill and other skill related issues for textile industry.
8. Graduates of the program (specially female) will get platform to design & create prototypes with changing demands of the textile market and fashion segment.

Syllabus of Courses

	The Maharaja Sayajirao University of Baroda **Faculty Technology and Engineering** **Department of Applied Physics**	**Academic Year**	**2020-21**

B.E. (Textile Engineering) and B.E. (Textile Technology) : Regular Programme

Year	**I**	**Core / ~~Elective / Foundation~~** **APH1201: Applied Physics-II**	**Credits / Hours per week**	**04**
Semester	**II**	Year of Introduction: 2003 Year of Syllabus Revision: 2012	**Maximum Marks / Grade**	**100**
Mode of Transaction		Lectures, Tutorials and Practical/TW/Viva		

Course Outcome (CO) APH1201 TX

CO1 Understanding the fibres
CO2 Understanding the physical properties of fibres
CO3 Methods to determine physical properties
CO4 Understanding of instrumentation
CO5 Analysis of color
CO6 Applications of fibres

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional (R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV)and Professional Ethics (PE)
1	Introduction to Fibres Classification of fibers, Natural and Manmade fibers and their general properties, Growth of fiber, Effect of external parameters i.e. Radiation, Temperature, Pressure and other on fiber	04	06	1	CO1	PSO1	SD	G	ES
2	Humidity, Regain and Moisture Content Humidity and relative Humidity, Hygrometers, Regain and Moisture Content, measurement of regain, relation between regain and relative	07	11	1,2	CO2 CO3	PSO1			

	humidity, influence of temperature and stress								
3	Colorimetry Science of colors, additive color mixture, three color mixture, spectrophotometry, dominant wavelength and purity, subtractive method of color mixing, the color of paint and inks, subtractive primaries	07	11	1,2, 3, 6	CO5	PSO1 PSO5 PSO7			
4	Microscopy Eye pieces, Principles and working of compound microscope, oil immersion microscope, polarization microscope, electron microscope and their use in studying surface and structure of fiber,	07	11	2, 3,4	CO4 CO6	PSO1 PSO5			
5	Spectroscopy Beer's law, Lambert's law, Principles and working of spectrophotometer and interpretation of UV, visible and IR spectra, sample preparation	07	11	2, 3,4	CO4 CO6	PSO1 PSO5			
6	Tensile Properties of Fibers Factors determining the results of Tensile experiments, Stress, specific stress, tensile strain, strength, work of rapture, Elongation at break, initial, modulus, work factor, yield point and crimp, The effect of moisture & Temperature, Pierce's, Spencers Smith's and weak link theories.	12	20	2,3	CO2 CO3	PSO1 PSO7			
7	Elastic Recovery Introduction, Definition, Experimental methods& their results, change of Properties as a result of straining, Swelling recovery, Simple recovery model, Recovery, work of rupture and durability,	08	10	2,3	CO2 CO3	PSO1 PSO5 PSO7			
8	Fiber Friction Technological Effects, Measurements of Friction, Bewden and Leben's Apparatus, Static and Dynamic Capston Method, Bucide and Pollitt's Technique and Measurement of inter-fiber Friction, Static and Kinetic Friction and State of the Surface, The nature of Fiber Friction and it's applications to Fiber Friction,The Friction of Wool, Theory of directional friction.	12	20	1, 2,3	CO2 CO3	PSO1 PSO5 PSO7			

Reference Books

1.	Physical properties of Textile fibers by W.E. Morton and J.W.S. Hearle, Woodhead Publishers, UK
2.	Optics by F.W. Sears, Addison-Wesley Publishing Co. Inc.
3.	A textbook of Optics, S.L.Kakani, K.C. Bhandari, S. Chand & Sons
4.	Modern Concepts of Color and Appearance, A.K. Roy Choudhury, Oxford& IBH Publishing Co. Pvt. Ltd.
5.	Organic Spectroscopy, Y.R. Sharma, S. Chand Publishers
6.	Fibre Science & Technology by P. Ghosh
7.	A Text Book of Fibre Science by S.P.Mishra (TS 1540 M4T3)