DEPARTMENT OF TECHNOLGY EDUCATION,IER
UNIVERSITY OF THE PUNJAB, LAHORE-PAKISTAN
Course Outline

Programme	BS Technology Education	**Course Code**	**BSTE307**	**Credit Hours**	3
Course Title	**Polymer and Wood Processes**				

Course Introduction

This course provides a basic introduction to the principles and practices of polymer and wood processing. Students will learn about various techniques, materials, and safety practices involved in working with polymers and wood. The course includes theoretical understanding and practical exercises to develop foundational skills in polymer and wood processing.

Learning Outcomes

On the completion of the course, the students will:

1. Understand the basic concepts and properties of polymers and wood.
2. Identify and use various processing techniques for polymers and wood.
3. Apply safety practices in polymer and wood processing.
4. Perform basic operations in polymer and wood processing.
5. Explore different applications and innovations in polymer and wood industries.

Course Content		Assignments/Readings
Week 1	**Introduction to Polymers and Wood** • **Unit 1.1**: Overview of Polymers	Reflective essay on the importance of polymers and wood in modern industry
	• **Unit 1.2**: Overview of Wood	
Week 2	**Basic Properties of Polymers** • **Unit 2.1**: Chemical Structure of Polymers	Research and present on different types of polymers and their properties
	• **Unit 2.2**: Physical Properties of Polymers	
Week 3	**Basic Properties of Wood** • **Unit 3.1**: Structure and Composition of Wood	Write a report on different types of wood and their properties
	• **Unit 3.2**: Physical Properties of Wood	
Week 4	**Safety Practices in Polymer and Wood**	Develop a safety plan for a

	Processing • **Unit 4.1**: Safety Equipment and Personal Protective Equipment (PPE) • **Unit 4.2**: Safety Procedures in Processing	polymer and wood processing workshop
Week 5	**Polymer Processing Techniques** • **Unit 5.1**: Extrusion and Injection Molding • **Unit 5.2**: Thermoforming and Blow Molding	Write a report on different polymer processing techniques and their applications
Week 6	**Wood Processing Techniques** • **Unit 6.1**: Sawing and Planing **Unit 6.2**: Sanding and Finishing	Develop a simple woodworking project plan
Week 7	**Polymer Fabrication Methods** • **Unit 7.1**: Additive Manufacturing (3D Printing) • **Unit 7.2**: Composite Manufacturing	Research and present on the latest trends in polymer fabrication
Week 8	**Wood Fabrication Methods** • **Unit 8.1**: Joinery Techniques • **Unit 8.2**: Laminating and Veneering	Write a report on different wood fabrication methods and their applications
Week 9	**Polymer and Wood Finishing Techniques** • **Unit 9.1**: Surface Treatments for Polymers • **Unit 9.2**: Finishing Techniques for Wood	Develop a finishing plan for a simple project involving polymers or wood
Week 10	**Environmental Impact and Sustainability** • **Unit 10.1**: Environmental Impact of Polymers • **Unit 10.2**: Sustainable Wood Practices	Write a report on sustainable practices in polymer and wood processing
Week 11	**Innovations in Polymer Processing** • **Unit 11.1**: Recent Advances in Polymer	Research and present on a recent innovation in

	Science • **Unit 11.2**: Emerging Polymer Processing Techniques	polymer processing
Week 12	**Innovations in Wood Processing** • **Unit 12.1**: Recent Advances in Wood Science • **Unit 12.2**: Emerging Wood Processing Techniques	Research and present on a recent innovation in wood processing
Week 13	**Practical Polymer Processing** • **Unit 13.1**: Hands-On Polymer Processing Practice • **Unit 13.2**: Project-Based Polymer Processing Practice	Complete a simple polymer processing project and document the process
Week 14	**Practical Wood Processing** • **Unit 14.1**: Hands-On Wood Processing Practice • **Unit 14.2**: Project-Based Wood Processing Practice	Complete a simple wood processing project and document the process
Week 15	**Final Project Development** • **Unit 15.1**: Planning and Designing the Final Project • **Unit 15.2**: Implementing the Final Project	Develop and present a final project involving both polymer and wood processing
Week 16	**Course Review and Final Assessment** • **Unit 16.1**: Review of Key Concepts and Themes • **Unit 16.2**: Comprehensive Final Exam	Group presentation summarizing key learning from the course
Textbooks and Reading Material		
1. Textbooks. o Polymer Science and Technology by Joel R. Fried		

2. Suggested Readings

- Wood Handbook: Wood as an Engineering Material by Forest Products Laboratory

Teaching Learning Strategies

1. **Lectures:** To introduce and explain key concepts and theories.
2. **Hands-on Labs:** To provide practical experience with robotics components and programming.
3. **Assignments and Projects:** To reinforce learning and encourage application of concepts in real-world scenarios.

Assessment

Sr. No.	Elements	Weight age	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.