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

Programme	BS Technology Education	Course Code	BSTE301	Credit Hours	3
Course Title	**Engineering Graphics**				

Course Introduction

This course provides a basic introduction to Engineering Graphics. Students will learn the fundamental principles of technical drawing, geometric construction, and graphical communication. The course includes theoretical understanding and practical exercises to develop foundational skills in engineering graphics.

Learning Outcomes

On the completion of the course, the students will:

1. Understand basic concepts and terminology of engineering graphics.
2. Apply principles of geometric construction.
3. Create and interpret technical drawings.
4. Use standard drawing tools and techniques.
5. Communicate design ideas effectively through graphical means.

Course Content		Assignments/Readings
Week 1	**Introduction to Engineering Graphics** • **Unit 1.1**: Overview of Engineering Graphics • **Unit 1.2**: Importance and Applications	Reflective essay on the role of engineering graphics in the design process
Week 2	**Basic Drawing Tools and Techniques** • **Unit 2.1**: Introduction to Drawing Tools • **Unit 2.2**: Basic Drawing Techniques	Create a simple technical drawing using basic tools
Week 3	**Geometric Construction** • **Unit 3.1**: Basic Geometric Shapes • **Unit 3.2**: Construction Techniques	Develop a series of geometric constructions
Week 4	**Orthographic Projection**	Create orthographic

	• **Unit 4.1**: Principles of Orthographic Projection	projections of a given object
	• **Unit 4.2**: Creating Orthographic Views	
Week 5	**Isometric Drawing** • **Unit 5.1**: Introduction to Isometric Drawing • **Unit 5.2**: Techniques for Isometric Projection	Develop isometric drawings of simple objects
Week 6	**Sectional Views** • **Unit 6.1**: Purpose of Sectional Views • **Unit 6.2**: Creating Sectional Drawings	Create sectional views of a given object
Week 7	**Dimensioning and Tolerance** • **Unit 7.1**: Principles of Dimensioning • **Unit 7.2**: Tolerance Techniques	Annotate a technical drawing with dimensions and tolerances
Week 8	**Auxiliary Views** • **Unit 8.1**: Understanding Auxiliary Views • **Unit 8.2**: Creating Auxiliary Projections	Develop auxiliary views of a complex object
Week 9	**Pictorial Drawings** • **Unit 9.1**: Introduction to Pictorial Drawings • **Unit 9.2**: Techniques for Creating Pictorial Views	Create pictorial drawings of mechanical components
Week 10	**Drafting Standards and Conventions** • **Unit 10.1**: Introduction to Drafting Standards • **Unit 10.2**: Applying Drafting Conventions	Research and present on international drafting standards
Week 11	**Working with Scales**	Create a drawing using

	• **Unit 11.1**: Understanding Different Scales	different scales for different parts
	• **Unit 11.2**: Applying Scales in Drawings	
Week 12	**Graphical Communication** • **Unit 12.1**: Importance of Graphical Communication • **Unit 12.2**: Techniques for Effective Communication	Present a design project using graphical methods
Week 13	**Assembly Drawings** • **Unit 13.1**: Introduction to Assembly Drawings • **Unit 13.2**: Techniques for Creating Assembly Views	Create an assembly drawing of a simple mechanical system
Week 14	**Engineering Design Process** • **Unit 14.1**: Overview of the Design Process • **Unit 14.2**: Role of Graphics in Engineering Design	Develop a design project plan integrating engineering graphics
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 engineering graphics project
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 Technical Drawing with Engineering Graphics by Frederick E. Giesecke, Alva Mitchell, and Henry C. Spencer

2. Suggested Readings

o Engineering Drawing and Design by David A. Madsen and David P. Madsen

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.