

OBJECTIVE

To enable the students to have a complete knowledge about the importance of glazing and the processing and application of glazes.

OUTCOME

On completion of the course the students are expected to

- Have learnt the definition of glazes and classification of glazes.
- Have a thorough knowledge about the raw materials and properties of the glaze raw materials.
- Have a thorough knowledge about the various glazing techniques.
- Have learnt the properties and defects produced by glazing.
- Have complete understanding about the various methods of decorating the glazed article.

UNIT I INTRODUCTION TO GLAZE

Definitions – composition of glaze – classification of different types of glazes – engobe – frit preparation – frit rules – compounding of lead and leadless glazes, alkaline glazes, calcareous glazes and feldspatic glazes.

UNIT II RAW MATERIALS AND PROCESSING

Glaze raw materials – effect of individual materials – opacifiers – colouring agents – stains – mixed colours – metallic lustures – unit operations and processes – glaze properties – grain size – specific gravity – viscosity – glaze control – additives – glaze suitability – fired properties of glazes.

UNIT III GLAZING TECHNIQUES AND SPECIAL GLAZES

Glazing techniques – dipping, pouring, spraying, brushing, dusting and other techniques-special glazes – matt glazes, snake skin glazes, crackled glazes, salt glazes and other glazes.

UNIT IV PROPERTIES AND DEFECTS

Glaze body reactions- interface layers- thermal characteristics- mechanical, optical and chemical properties of glazes - glaze defects and remedies- crazing, peeling, crawling, rolling, blisters, pin holes, dunting.

UNIT V DECORATION

Classification of decoration methods- advantages- different decorating techniques- painting, spraying, stenciling, stamping, printing, lithographic transferring, silk screen printing, dusting, engobing, liquid gold decoration and decoration techniques.

TEXT BOOKS

1. Kenneth Shaw, Ceramic Glazes, Elsevier Publishing Co., NY, 1971.

2. Tailor J.R and Bull A.C, Ceramics Glaze Technology, Pergamon Press, NY, 1986.

REFERENCES

1. Emmanuel Cooper, The Potter Book of Glaze Recipes, B.T.Batsford Ltd., London, 1986.
2. Hiraoki Yanagida, The Chemistry of Ceramics, John Wiley and Sons, 1996.
3. Terpstra, Ceramic Processing, Chapman and Hall, 1995.