COURSE NAME: INDUSTRIAL CERAMICS COURSE CODE: IFA 2212 Course Description:

Design concepts, techniques and methods ceramics related to industrial production investigation into the past and present trends, processes, and materials. Emphasis on earthenware bodies and decoration techniques. Explore bodies like stoneware porcelain and decorative techniques stressing individual expression in ceramic media, casting, throwing, pressing for mass production in studio and industrial settings.

Prerequisite IFA 1212

Objectives/Aims

- To demonstrate the relationship between design, methods of production, materials and associated costs.
- To give practical experience of the above by providing suitable ceramic products for students examination and analysis
- To gain an understanding of ceramic product design process from concept stage to production process and to marketing and sales.
- To gain an insight into setting up a ceramic studio/workshop for a self reliant ceramic potter.

Detailed course outline

Week 1: Studio Ceramics verses Industrial Ceramics

- The concept of mass production in ceramics
- The concept of studio ceramics
- Small, medium and large ceramic production industries
- World renowned studio in UK, France, China, Japan and Africa.
- Market sector and forming consideration in the ceramic sector.
- Local market and export market for studio ceramics
- Main product lines and forming options
- Industrial ceramic theory e.g. theory is practice.

Week 2: Production concepts in industrial ceramics

- Overture to industrial ceramics setting
- Industrial ceramics settings
- Trends in industrial ceramics
- Design process for mass production
- Basic product development in ceramics
- Methods and techniques in industrial ceramics

Week 3: Production Concepts in Industrial Ceramics

- Design process for mass production

- Ceramics technical drawing
- Basic product development i.e. techniques in Ceramics **Week 4: Student project in Designing for mass production**
- Stages of Design process
- Situation analysis and problem identification
- Research and solution finding
- Construction of prototypes
- Aesthetics vs. function
- Harmony and contrast
- Size and weight
- Colour and emotions
- Environmental influences
- Social and cultural influences in design consideration
- Design for people
- Forms, shapes and structures

Week 5: Mass Production for Ceramists/Potters

- Self-reliant ceramist
- Production from a potter's wheel
- Types of potter's wheel
- Finishing on potter's wheel

Week 6: Casting Techniques and Materials in Ceramics

- Casting simple forms
- Casting from multiple poster moulds
- Casting complicated forms
- Casting bodies
- Casting faults and remedies
- Deflocculates

Week 7: Jiggering and Jollying for small and medium ceramic industries

- Appropriate use of jiggering method
- Jollying methods both for small and medium establishment
- Mechanical methods of production under jiggering and jollying
- Improvisation in the jiggering and jollying techniques
- Preparation of Clay body for extrusion process
- Plastic and dry pressing
- Field visits to industries executing the extrusion processes **Week 8: Prototyping for Casting**

- Mould making using plaster of Paris
- Casting from found objects
- Making prototypes for casting
- Making moulds for production
- Single mould and multiple mould making
- Casting slips i.e. preparations

Week 9: Critique for student's projects

- Display of students work for evaluation and discussion
- Presentation of students projects in a report form

Week 10: Trends in industrial ceramics

- Industrial revolution to present
- Design development
- Setting up industrial firms
- Industrial equipment

Week 11: Research Process in Ceramics

- Ceramic colourants and other decorative media
- Individual research projects on market outlet for ceramics
- Developing self-criticism
- Evaluation

Week 12: Setting up a ceramic studio for a self reliant potter

- Basic requirement for a ceramic studio
- Sources for ceramic materials and equipments
- Basic design for a ceramic studio/workshop
- Strategic planning for a studio in ceramic practice

- Investment decisions
- Choosing your product design line
- Machinery consideration

Week 13: Industrial Glaze Application

- Glaze recipes
- Glaze calculations
- Limit formula
- The influence of alumina and silica
- Seger formula

Week 14: Refractory in Ceramics

- What is ceramics refractory
- Refractory sources in Uganda
- Refractory tests
- Making own refractory ware

Learning outcomes

The course will provide students with a foundation of knowledge and skills necessary for further study and studio/industrial practice of ceramics production and design. Students will be exposed to exploration of 3- dimensional forms in clay through direct shaping and construction discovering the possibilities and limitations of different clay bodies in respect to design, speed, cost, strength and aesthetics by creating and evaluating ceramic forms which are functional and usable.

The students should become knowledgeable about mass and series of production processes and materials in ceramic studio and industrial setting in order to:

(i) Be able to make intelligent choices in selecting suitable production process and appropriate material for a given ceramic product.

(ii) Be able to design ceramic forms which may be efficiently made, fired and glazed.

(iii) Have an awareness of the relevant market and cost of the ceramic product designed.

Students are encouraged identify and develop personal design approaches in ceramics both in studio and industrial setting with the idea of becoming self-reliant ceramicist.

Teaching and learning strategies

- Chalk and talk for theory (theory and practice)

- Visual resource materials / sketch books
- Studio demonstrations, instructions and technical input
- Group review/presentation and critique
- Self (independent) directed studio assignment/project/course work to be supervised by the lecturers
- Visual research (field, websites, books etc)
- Weekly lectures

Reading/Reference Materials

Bryan Sentence; Ceramics a world guide to traditional techniques themes and Hudson 2004.

Dolors Ros ; Ceramics decorative techniques, Barrons, 2001

James Garrat; Design and Technology Cambridge University Press 1994.

Jane Gale ; Teach your self pottery Hodder and Stoughton, 2001