

ANNOUNCEMENT

TWO PHASE GAS-LIQUID FLOW SHORT COURSE PRINCIPLES FOR MODELLING GAS-LIQUID FLOW FEBRUARY 22-26, 1982 UNIVERSITY OF HOUSTON CHEMICAL ENGINEERING DEPARTMENT HOUSTON, TEXAS

DESCRIPTION:

The basic framework for modelling a wide variety of gas-liquid flow problems is now well understood, much having been completed in recent years. This course will present this modern approach in sufficient detail so that those attending can apply the results to problems of design. In addition, this should prepare the participant to understand the new literature which emerges in the years to come.

This method first predicts the flow pattern. Then for each pattern, the flow behavior is modelled. Once this is done the modelling is extended to solve problems of heat and mass transport. Reliable data is important to an understanding of the mechanisms of two phase flow. For this reason the course reviews some modern measuring methods as well as recent data.

The extensive facilities of the two phase flow research laboratory will be made available to participants. Demonstrations will be conducted in the two phase flow loops and special instrumentation techniques will be shown with hands-on experiments. Interaction with the research team will be possible. Problem sessions are included in which the ideas developed in the course are applied to design. Extensive course notes and references on all material presented will be provided.

LECTURERS:

A. E. DUKLER: PhD (Delaware) Professor of Chemical Engineering and Dean of Engineering, University of Houston.

Y. TAITEL: PhD (Delaware), Professor, Department of Fluid Mechanics and Heat Transfer, Tel Aviv University, Tel Aviv, Israel.

COURSE OUTLINE:

Monday, February 22 - INTRODUCTORY CONCEPTS

- Occurrence and Application of Gas-Liquid Flow
- Effects of Two Phase Flow on Transport
- The Role of Flow Patterns
- Connections with Methods Already in Use

Tuesday, February 23 - MODELLING FLOW PATTERN TRANSITIONS

- Horizontal and Near Horizontal Flows
- Vertical and Near Vertical Flows
- Transient Effects
- Boiling/Condensation Effects
- Non-Regular Geometries

Wednesday, February 24

MODELLING STRATIFIED FLOWS

- Holdup, Pressure Drop, Heat Transfer

MODELLING HORIZONTAL SLUG FLOWS

- Hydrodynamics, Frequency, Heat Transfer

MODELLING ANNULAR FLOWS

- Falling Films (Hydrodynamics, Heat Transfer)
- Wave Motion
- Interfacial Shear and Friction

Thursday, February 25 - MODELLING VERTICAL UPWARD GAS-LIQUID FLOW

- Holdup, Friction, Heat Transfer for Each Flow Pattern

Friday, February 26 - MODERN MEASURING METHODS

- Flow Pattern Detection
- Drop and Bubble Size and Velocity
- Film Thickness and Wave Structure
- Heat Transfer Parameters

ARRANGEMENTS :

Course fee is \$600 including notes, coffees and class dinner. Limited accommodations are available at the University of Houston Hotel and at area motels and hotels.

Checks should be made payable to University of Houston TPF Course, and should be sent with reservation request to:

Mrs. Ann Matthews
University of Houston
Chemical Engineering Dept.
Houston, Texas 77005

Last day for reserving space in the course is January 25.