Int. J. Multiphase Flow Vol. 8, No. 6, pp. 697–698, 1982. Pergamon Press Ltd. Printed in Great Britain

ANNOUNCEMENT

TWO PHASE GAS-LIQUID FLOW SHORT COURSE
PRINCIPLES FOR MODELLING GAS-LIQUID FLOW

February 28-March 4, 1983

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 rason 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 appplied to design. Extensive course notes and references on all materials 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 28 - **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, March 1 - **Modelling Flow Pattern Transitions**
- .Horizontal and Near Horizontal Flows
- .Vertical and Near Vertical Flows
- .Transient Effects
- .Boiling/Condensation Effects
- .Non-Regular Geometries
- .Flow Reversal and Flooding

Wednesday, March 2
Modelling Stratified Flows
.Holdup, Pressure Drop, Heat Transfer
Modelling Horizontal Slug Flows
.Hydrodynamics, Frequency, Heat Transfer
Modelling Annular Flows
.Falling and Rising Films (Hydrodynamics, Heat Transfer)
.Wave Motion
.Interfacial Shear and Friction

Thursday, March 3 - **Modelling Vertical Upward Gas-Liquid Flow**
.Holdup, Friction, Heat Transfer for Each Flow Pattern
.Terrain Induced Slugging for Gathering System Design

Friday, March 4 - **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 a 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 to:

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

Last day for reserving space in the course is January 31.