UNIVERSITY COLLEGE OF THE FRASER VALLEY

COURSE INFORMATION

DISCIPLINE/DEPARTMENT: PHYSICS **IMPLEMENTATION DATE:** September 1995

Revised:

PHYSICS 325	Fluid Mechanics	3
SUBJECT/NUMBER OF COURSE	**DESCRIPTIVE TITLE**	**UCFV CREDITS**

CALENDAR DESCRIPTION: Fluid mechanics is undergoing renaissance with the advent of personal computers. In this course we will examine the fundamental laws of fluid motion and use accompanying software to solve realistic problems.

RATIONALE: Student Demand

COURSE PREREQUISITES: Physics 231; Math 211, 212

COURSE COREQUISITES:

HOURS PER TERM FOR EACH STUDENT	**Lecture**	**60**	**hrs**	**Student Directed Learning**		**hrs**
	Laboratory		**hrs**	**Other - specify:**		
	Seminar		**hrs**			**hrs**
	Field Experience		**hrs**	**TOTAL**	**60**	**HRS**

MAXIMUM ENROLMENT: 35

Is transfer credit requested? Yes No

AUTHORIZATION SIGNATURES:

Course Designer(s): R.W.M. Woodside, Ph.D

Chairperson: Art Last
Curriculum Committee

Department Head: Tim Cooper

Dean: Wayne Welsh, Ph.D

PAC: Approval in Principle _____ **(Date)**

PAC: Final Approval: 29 11 95 **(Date)**

OUTLN95/01/dd

Fluid Mechanics - Physics 325

NAME & NUMBER OF COURSE

SYNONYMOUS COURSES:

(a) replaces
(course #)

(b) cannot take _____ for further credit
(course #)

SUPPLIES/MATERIALS:

N/A

TEXTBOOKS, REFERENCES, MATERIALS (List reading resources elsewhere)

Introduction to Fluid Mechanics, 4th ed; R.W. Fox, A.T. McDonald, Wiley (1994)
Fluid Mechanics, Vol.6 of course of Theoretical Physics, L. D. Landau, Pergamon (1959)
Mechanics of Deformable Bodies, Vol 2 of Lectures on Theoretical Physics, A. Sommerfeld, Academic (1929)

OBJECTIVES:

To introduce the student to Fluid Mechanics

METHODS:

This course will be taught using lectures, demonstrations and accompanying software. Problems will be assigned and marked on regular basis.

STUDENT EVALUATION PROCEDURE:

Assignments 25%
Midterm Examinations 30%
Final Examinations 45%

Fluid Mechanics **- Physics 325**
NAME & NUMBER OF COURSE

COURSE CONTENT

Week	Topic	Fox Chapter
1	**Introduction**	**1**
2	**Fundamental Concepts**	**2**
3-4	**Statics**	**3**
5-6	**Integral Equations In Control Volumes**	**4**
6-7	**Differential Analysis of Fluid Flow**	**5**
7-8	**Incompressible, Inviscid Flow**	**6**
9	**Dimensional Analysis or Similitude**	**7**
10	**Internal Incompressible Viscous flow**	**8**
11	**Extremal incompressible Viscous Flow**	**9**
12	**Flow in Open Channels**	**10**
13	**Introduction to Compressible flow**	**12**