



( $\mu$  )  
 $\mu$  ,  $\mu$  .  $\mu$  ,  $\mu$  .

$\mu$  ,  $\mu$   $\mu$  ,  $\mu$   $\mu$  ,

$\mu$  ,  $\mu$   $\mu$  ,  $\mu$  ,

Bernoulli,  $\mu\mu$  ,  $\mu\mu$  , Euler,  
 $\mu$   $\mu\mu$  ,  $\mu\mu$  ,

$\mu$  Reynolds,  $\mu$  :

$\mu$  ,  $\mu$   $\mu$  :

$\mu\mu$  ,  $\mu$

$\mu$  ,  $\mu\mu$  .

$\mu$  ,  $\mu$   $\mu$  (  $\mu$   $\mu$  ,  $\mu$   $\mu$  ,  
 $\mu$  ) .

$\mu$   $\mu$  , , ,

$\mu$   $\mu$   $\mu$   $\mu$   $\mu$  :  
 $\mu$  ,  $\mu$  ,  $\mu$  .

$\mu$   $\mu$  ,

$\mu$  ,  $\mu$  Mach,  $\mu$   $\mu$   $\mu$  ,

( )  $\mu$

$\mu$   $\mu$   $\mu$  (  $\mu\mu$  Fanno )  $\mu$

(  $\mu\mu$  Rayleigh)  $\mu$   $\mu$   $\mu$

:  $\mu$   $\mu$  Bourdon ( , ) .  $\mu$  ,  
 $\mu$  Venturi .  $\mu\mu$   $\mu$

$\mu$   $\mu\mu$  .

$\mu$   $\mu$   $\mu$  .

$\mu$  : ( ) CANNON-FENSKE ( ) KPG-UBBELOHDE

$\mu$   $\mu$  , (porosity )  
 $\mu$

:  $\mu$

: , . . . “ ” ,  
ISBN 960-411-129-9, 2006  
Streeter, V. & Wylie, B.  
“ ” ,  
ISBN 960-411-481-6, 2006

$\mu$

$\mu$  : , . , 1996, ,  $\mu$  & .

White, F., *Fluid Mechanics*, 5<sup>th</sup> Ed., McGraw Hill, 2002.

Fox, R.W., and McDonald, A.T., 1992, *Introduction to Fluid Mechanics*, 4<sup>th</sup> Ed., John Wiley.

Gerhart, P.M., Gross, R.J., and Hochstein, J.I., *Fundamentals of Fluid Mechanics*, 2<sup>nd</sup> Ed., Addison-Wesley, 1992.

Munson, B.R., Young, D.F., and Okiishi, T.H., *Fundamentals of Fluid Mechanics*, 3<sup>rd</sup> Ed., John Wiley, 1998.

Wilcox, D.G., 2007, *Basic Fluid Mechanics*, 3<sup>rd</sup> Ed. DCW Industries.

$\mu$  :  $\mu$   $\mu$  ,  $\mu$  I & II ( ).

$\mu$  : ,  $\mu$   $\mu\mu$   $\mu$   $\mu$  ,

$\mu$   $\mu$   $\mu$  ,  $\mu$  ,  $\mu\mu$   
 $\mu$   $\mu$  17:00 .

$\mu$  .  
 $\mu$   $\mu$  2 .  $\mu$   
 $\mu$  .  $\mu$  20%  
 $\mu$  .  $\mu$  20%  
 $\mu$  . ,  $\mu$   $\mu$  80%  
60% .

$\mu\mu$

80%

/

35%

$\mu$   $\mu$   $\mu$   $0,7 \mu$   
 $1,4 \mu$   
 $\mu$   $\mu$   $5, \mu$   
 $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   
 $\mu$

	1: $\mu$ , .., 1996, $\mu$ . Wilcox, D.G., 2007, <i>Basic Fluid Mechanics</i> , 3 <sup>rd</sup> Ed. DCW Industries: <a href="http://www.dcwindustries.com/books/1928729312.htm">http://www.dcwindustries.com/books/1928729312.htm</a>
	White, F., <i>Fluid Mechanics</i> , 5 <sup>th</sup> Ed., McGraw Hill, 2002. 2: Streeter, V. & Wylie, B.
$\mu$ Bernoulli	Cengel & Cimbala <i>Fluid Mechanics Fundamentals and Applications</i> , McGraw Hill, 2006. <a href="http://highered.mcgraw-hill.com/sites/0072472367/information_center_view0/sample_chapter.html">http://highered.mcgraw-hill.com/sites/0072472367/information_center_view0/sample_chapter.html</a> , .., 1996, ( 63-124) $2 \mu$ ( 279-297) & $2 \mu$ 1 $\mu$ ( 16-47)
$\mu$	

**(Textbooks)**

Benedict, R.P., *Fundamentals of Temperature, Pressure, and Flow Measurements*, 3<sup>rd</sup> Ed., John Wiley, 1984

Bird, R.B., Stewart, W.E., and Lightfoot, E.N., *Transport Phenomena*, J. Wiley, 1966.

Douglas, J.F., Gasiorek, J.M., Swaffield, J.A., *Fluid Mechanics*, Longman Group United Kingdom; ISBN: 0582414768

Douglas, J.F., Matthews, R.D. (Contributor), *Solving Problems in Fluid Mechanics*, Addison-Wesley Pub Co; ISBN: 0582239877

Evett, J.B., Liu, C. (Contributor), *2,500 Solved Problems in Fluid Mechanics and Hydraulics*, McGraw-Hill; ISBN: 0070197849

Fay, J.A., *Introduction to Fluid Mechanics*, MIT Press; ISBN: 0262061651

Franzini, D., *Fluid Mechanics with Engineering Applications*, McGraw Hill College Div; ISBN: 0075617226

Giles R. V., 1999, *Theory and Problems of Fluid Mechanics and Hydraulics*, McGraw - Hill Schaum's Outline Series

Goldstein, R.J., "Fluid Mechanics Measurements", Hemisphere, New York, 1983.

Gray, D.D., *A First Course in Fluid Mechanics for Civil Engineers*, Water Resources Pubns; ISBN: 1887201114

Jeppson, R.W., "Analysis of Flow in Pipe Networks", Ann Arbor Science Publishers, Ann Arbor, Mich., 1976.

John, J.E.A., *Gas dynamics*, 2<sup>nd</sup> Ed., Allyn and Bacon, 1984.

Kleinstreuer, C., *Engineering Fluid Dynamics: An Interdisciplinary Systems Approach*, Cambridge Univ Pr; ISBN: 0521496705

Liepman H. W., Roshko A., 1967, *Elements of Gas Dynamics*, John Wiley and Sons.

Liggett, J. A., *Fluid Mechanics*, McGraw Hill College Div; ISBN: 0070378053

Liggett, J.A., Caughey, D.A., *Fluid Mechanics: An Interactive CD ROM Text*, American Society of Civil Engineers; ISBN: 0784403104

Moran, M.J., and Shapiro, H.N., "Fundamentals of Engineering Thermodynamics", 4<sup>th</sup> Ed., Wiley, New York, 2000.

Munson, B.R., Young D.F., Okiishi, T.H., *Fundamentals of Fluid Mechanics*, John Wiley & Sons

Nakayama, Y., Boucher, R., *Introduction to Fluid Mechanics*, John Wiley & Sons

Potter, M.C., Wiggert, D.C., Hondzo, M. (Contributor), *Mechanics of Fluids*, Prentice Hall; ISBN: 0132076225

Olson, R.M., *Essentials of Engineering Fluid Mechanics*, ASIN: 0700224327

Oosthuizen, P.H., and Carscallen, W.E., *Compressible fluid flow*, McGraw-Hill, 1997.

Roberson, J.A., Crowe, C.T., *Engineering Fluid Mechanics*, John Wiley & Sons; ISBN: 0471147354

Rouse, H., *Elementary Mechanics of Fluids*, Dover Pubns; ISBN: 0486636992

Saad, M.A., 1993, *Compressible Fluid Flow*, 2<sup>nd</sup> Ed., Prentice Hall.

Sabersky, R.H. (Editor), Hauptmann, E.G., Acosta A. J., *Fluid Flow: A First Course in Fluid Mechanics*, Prentice Hall;

Shames, I.H., *Mechanics of Fluids (McGraw-Hill Series in Mechanical Engineering)*, McGraw-Hill Higher Education; ISBN: 007056387X

Shapiro, A.H., *The dynamics and thermodynamics of compressible fluid flow*, Vols I & II, Ronald Press, 1953.

Smits, A.J., Smith, A.J., *A Physical Introduction to Fluid Mechanics*, John Wiley & Sons; ISBN: 0471253499

Spurk, J.H., 1997, *Fluid Mechanics*, Springer-Verlag.

Streeter, V.L., Wylie, E.B., Bedford, K.W., *Fluid Mechanics*, McGraw-Hill Higher Education; ISBN: 0070625379

Street, R.L., Waters, G.Z., and Vennard, J.K., 1995, *Elementary Fluid Mechanics*, 7th Ed., John Wiley.

Tritton, D.J., 1988, *Physical Fluid Dynamics*, 2<sup>nd</sup> Ed., Oxford Press.

Van Dyke, M., *Album of Fluid Motion*, Parabolic Press, Inc.; ISBN: 0915760037

Webber, N.B., *Fluid Mechanics for Civil Engineers*, E & F N Spon; ISBN: 0412106000

White, F.M., *Fluid Mechanics*, McGraw-Hill Book Company, ISBN: 0072281928