

# River Engineering

## Bibliography of useful references

Tables 1-4 show some of the many references available, some which the lecturer has referred to in these notes or in his work.

Reference	Comments	
<b>English</b>		
Chanson, H. (1999), <i>The Hydraulics of Open Channel Flow</i> , Arnold, London.	Good introduction, also sediment aspects	UBTUW JDF
Chaudhry, M.H. (1993), <i>Open-channel flow</i> , Prentice-Hall.	Very good readable but technical book	E222 JDF
Chow, V.T. (1959), <i>Open-channel Hydraulics</i> , McGraw-Hill, New York.	Classic, now dated, not so readable	E222 JDF
Francis, J.R.D. & Minton, P. (1984), <i>Civil Engineering Hydraulics</i> , fifth edn, Arnold, London.	Good elementary introduction	JDF
French, R.H. (1985), <i>Open-Channel Hydraulics</i> , McGraw-Hill, New York.	Wide general treatment	E222 JDF
Henderson, F.M. (1966), <i>Open Channel Flow</i> , Macmillan, New York.	Classic, high level, readable	UBTUW JDF
Jain, S.C. (2001), <i>Open-Channel Flow</i> , Wiley.	High level, but terse and readable	JDF
Julien, P.Y. (2002), <i>River Mechanics</i> , Cambridge.	Ditto – more applications to morphology	E222 UB- TUW JDF
Montes, S. (1998), <i>Hydraulics of Open Channel Flow</i> , ASCE, New York.	Encyclopaedic & Definitive	JDF
Townson, J.M. (1991), <i>Free-surface Hydraulics</i> , Unwin Hyman, London.	Simple, readable, mathematical	E222 JDF
Vreugdenhil, C.B. (1989), <i>Computational Hydraulics: An Introduction</i> , Springer.	Simple introduction to computational hydraulics	E222 JDF
<b>Deutsch</b>		
Forchheimer, Ph. (1930), <i>Hydraulik</i> , Teubner, Leipzig	The Austrian and International classic of mathematical hydraulics	UBTUW
Naudascher, E., (1992), <i>Hydraulik der Gerinne und Gerinnebauwerke</i> , Springer Verlag, Wien, New York		UBTUW
Preißler, G., Bollrich, G., (1985) <i>Technische Hydromechanik</i> , VEB Verlag für Bauwesen, Berlin		UBTUW

Table 1. Introductory and general references

Reference	Comments	
Boiten, W. (2000), <i>Hydrometry</i> , Balkema	A modern treatment of river measurement	JDF
Bos, M.G. (1978), <i>Discharge Measurement Structures</i> , second edn, International Institute for Land Reclamation and Improvement, Wageningen.	Good encyclopaedic treatment of structures	E128
Bos, M.G., Replogle, J.A. & Clemmens, A.J. (1984), <i>Flow Measuring Flumes for Open Channel Systems</i> , Wiley.	Good encyclopaedic treatment of structures	
Fenton, J.D. & Keller, R.J. (2001), <i>The calculation of streamflow from measurements of stage</i> , Technical Report 01/6, Co-operative Research Centre for Catchment Hydrology, Monash University.	Two level treatment - practical aspects plus high level review of theory	JDF
Novak, P., Moffat, A.I.B., Nalluri, C. & Narayanan, R. (2001), <i>Hydraulic Structures</i> , third edn, Spon, London.	Standard readable presentation of structures	E222

Table 2. Books on practical aspects, flow measurement, and structures

Reference	Comments	
Cunge, J.A., Holly, F.M. & Verwey, A. (1980), <i>Practical Aspects of Computational River Hydraulics</i> , Pitman, London.	Thorough and reliable presentation	JDF
Dooge, J.C.I. (1987), <i>Historical development of concepts in open channel flow</i> , in G. Garbrecht, ed., <i>Hydraulics and Hydraulic Research: A Historical Review</i> , Balkema, Rotterdam, pp.205–230.	Interesting review	JDF
Flood Studies Report (1975), <i>Flood Routing Studies</i> , Vol. 3, Natural Environment Research Council, London.	A readable overview	E222 JDF
Lai, C. (1986), <i>Numerical modeling of unsteady open-channel flow</i> , in B. Yen, ed., <i>Advances in Hydrosience</i> , Vol. 14, Academic.	Good review	UBTUW JDF
Liggett, J.A. (1975), <i>Basic equations of unsteady flow</i> , in K. Mahmood & V. Yevjevich, eds, <i>Unsteady Flow in Open Channels</i> , Vol. 1, Water Resources Publications, Fort Collins, chapter 2.	Readable overview	JDF
Liggett, J.A. & Cunge, J.A. (1975), <i>Numerical methods of solution of the unsteady flow equations</i> , in K. Mahmood & V. Yevjevich, eds, <i>Unsteady Flow in Open Channels</i> , Vol. 1, Water Resources Publications, Fort Collins, chapter 4.	Readable overview	JDF
Miller, W.A. & Cunge, J.A. (1975), <i>Simplified equations of unsteady flow</i> , in K. Mahmood & V. Yevjevich, eds, <i>Unsteady Flow in Open Channels</i> , Vol. 1, Water Resources Publications, Fort Collins, chapter 5, pp. 183–257.	Readable	JDF
Price, R.K. (1985), <i>Flood Routing</i> , in P. Novak, ed., <i>Developments in hydraulic engineering</i> , Vol. 3, Elsevier Applied Science, chapter 4, pp. 129–173.	The best overview of the advection-diffusion approximation for flood routing	E222
Skeels, C.P. & Samuels, P.G. (1989), <i>Stability and accuracy analysis of numerical schemes modelling open channel flow</i> , in Č. Maksimović & M. Radojković, eds, <i>Computational Modelling and Experimental Methods in Hydraulics (HYDROCOMP '89)</i> , Elsevier.	Review	JDF

Table 3. References on flood & wave propagation – theoretical and computational

Reference	Notes
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The full equations for wave propagation and flood routing	
Cunge, J.A., Holly, F.M. & Verwey, A. (1980) Practical Aspects of Computational River Hydraulics, Pitman, London.	The best explanation of this field
Liggett, J.A. (1975) Basic equations of unsteady flow, Unsteady Flow in Open Channels, K.Mahmood & V.Yevjevich (eds), Vol.1, Water Resources Publications, Fort Collins, chapter 2.	A little disappointing, but the next best explanation
Liggett, J.A. & Cunge, J.A. (1975) Numerical methods of solution of the unsteady flow equations, Unsteady Flow in Open Channels, K.Mahmood & V.Yevjevich (eds), Vol.1, Water Resources Publications, Fort Collins, chapter 4.	
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The advection-diffusion approximation for flood routing	
Price, R.K. (1985) Flood Routing, Developments in Hydraulic Engineering, P.Novak (ed.), Vol.3, Elsevier Applied Science, chapter4, pp.129–173.	The best overview
Dooge, J.C.I. (1986) Theory of flood routing, River Flow Modelling and Forecasting, D.A. Kraijenhoff & J.R. Moll (eds), Reidel, chapter3, pp.39–65.	A good general study
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Numerical methods – fundamentals	
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Liggett, J.A. & Cunge, J.A. (1975) Numerical methods of solution of the unsteady flow equations, Unsteady Flow in Open Channels, K.Mahmood & V.Yevjevich (eds), Vol.1, Water Resources Publications, Fort Collins, chapter 4.	
Noye, B.J. (1976) International Conference on the Numerical Simulation of Fluid Dynamic Systems, Monash University 1976, North-Holland, Amsterdam; Noye, B.J. (1981) Numerical solutions to partial differential equations, Proc. Conf. on Numerical Solutions of Partial Differential Equations, Queen’s College, Melbourne University, 23-27 August, 1981, B.J. Noye (ed.), North-Holland, Amsterdam, pp.3–137; Noye, B.J. (1984) Computational techniques for differential equations, North-Holland, Amsterdam; Noye, J. & May, R.L. (1986) Computational Techniques and Applications: CTAC 85, North-Holland, Amsterdam.	All offer a simple introduction to finite difference methods;
Smith, G.D. (1978) Numerical Solution of Partial Differential Equations, Oxford Applied Mathematics and Computing Series, Second Edn, Clarendon, Oxford.	A more detailed introduction to finite difference methods
Morton, K.W. & Baines, M. (1982) Numerical methods for fluid dynamics, Academic; Morton, K. & Mayers, D. (1994) Numerical solution of partial differential equations : an introduction, Cambridge; Morton, K.W. (1996) Numerical solution of convection-diffusion problems, Chapman and Hall, London; Richtmyer, R.P. & Morton, K.W. (1967) Difference Methods for Initial Value Problems, Second Edn, Interscience, New York.	All are rather more comprehensive, describing some more general methods
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Table 4. Useful references