

## MA20220 Reading List

References 12 and 16 are the most appropriate books for this course: 12 for differential equations and Laplace transforms and 16 for control theory. Reference 18 covers most of the control theoretic topics of this course (and many more). The references marked by \* are somewhat more advanced. Those who like to experiment with MAPLE may find reference 1 useful. References 3 and 11 contain sections which deal in an elementary way with a variety of topics from nonlinear differential equations.

### ODEs & Laplace Transform

- [1] M.L. Abell and J.P. Braselton, *Differential Equations with MAPLE V*, Academic Press, 1994.
- [2]\* V.I. Arnold, *Ordinary Differential Equations*, Springer, 1992.
- [3] P. Blanchard, R.L. Devaney and G.R. Hall, *Differential Equations*, PWS Publishing Company, 1996.
- [4] M. Braun, *Differential Equations and Their Applications*, Springer, 1993.
- [5] W.R. Derrick and S.I. Grossman, *Elementary Differential Equations with Applications*, 2nd ed, Addison-Wesley, 1981.
- [6]\* R.D. Driver, *Ordinary and Delay Differential Equations*, Springer, 1977.
- [7]\* M.W. Hirsch and S. Smale, *Differential Equations, Dynamical Systems, and Linear Algebra*, Academic Press, 1974.
- [8] A. Jeffrey, *Linear Algebra and Ordinary Differential Equations*, Blackwell, 1990.
- [9]\* W. Kaplan, *Operational Methods for Linear Systems*, Addison-Wesley, 1962.
- [10]\* H.K. Khalil, *Nonlinear Systems* (2nd edition), Prentice-Hall, 1996.
- [11] E.J. Koestlich and D. Armbruster, *Introductory Differential Equations*, Addison-Wesley, 1996.
- [12] R.K. Nagle and E.B. Saff, *Fundamentals of Differential Equations*, Addison-Wesley, 3rd ed. 1993, 4th ed. 1996 or 5th ed. 2000.
- [13]\* W. Walter and R. Thompson, *Ordinary Differential Equations*, Springer, 1998.

### Control Theory

- [14]\* S. Barnett, *Introduction to Mathematical Control Theory*, Oxford University Press, 1975.
- [15]\* R.W. Brockett, *Finite-Dimensional Linear Systems*, Wiley, 1970.
- [16] G.F. Franklin, J.D. Powell and Abbas Emami-Naeini, *Feedback Control of Dynamic Systems*, 3rd ed, Addison-Wesley, 1994.
- [17] E. Polak and E. Wong, *Notes for a First Course on Linear Systems*, Van Nostrand, 1970.
- [18] C.E. Rohrs, J.L. Melsa and D.G. Schultz, *Linear Control Systems*, McGraw-Hill, 1993.
- [19]\* W.J. Rugh, *Linear System Theory* (2nd edition), Prentice-Hall, 1996.
- [20]\* E.D. Sontag, *Mathematical Control Theory: Deterministic Finite-Dimensional Systems*, Springer, 1990 (revised 2nd edition, 1998).
- [21]\* J. Zabczyk, *Mathematical Control Theory: An Introduction*, Birkhauser, 1992.