MSc in ACSE Reading List 2010

Unit 1.1: Control Fundamentals

1. Astrom, Murray, 'Feedback Systems: An Introduction for Scientists and Engineers' - available here:
2. http://www.cds.caltech.edu/~murray/amwiki/Main_Page
3. Franklin, Powell, Emami-Naeini, Feedback Control for Dynamic Systems, Prentice-Hall
4. Dorf and Bishop, Modern Control Systems, Prentice Hall

Unit 1.2: Process Control and Automation

1. Seborg, Edgar, Mellichamp, Process Dynamics and Control, Wiley
2. Marlin, Process Control, McGraw Hill
3. Luyben, Essentials of Process Control, McGraw-Hill Chemical Engineering

Unit 1.3: State Space and Digital Control

1. Dorf and Bishop, Modern control systems, Prentice-Hall
2. Franklin and Powell and Emami-Naeini, Feedback control of dynamic systems, Prentice-Hall
3. Ogata, Modern control engineering, Prentice-Hall
4. K. J. Astrom and B. Wittenmark: *Computer-Controlled Systems (3rd edition).* Prentice Hall, 1997.
5. L. Ljung and T. Glad: *Control Theory: Multivariable and Nonlinear Methods*. Taylor and Francis, 2000.
6. G. F. Franklin, J. D. Powell and M. L. Workman: *Digital control of dynamic systems (3rd edition).* Addison-Wesley, 1998.

Unit 1.4: System Identification and Fault Detection

1. L Ljung, *System Identification: Theory for the User*, Prentice Hall, 1998.
2. P Wellstead, *System Identification*, download from course homepage – blackboard.
3. R. Isermann, *Fault-diagnosis systems: an introduction from fault detection to fault tolerance*, Springer, 2006.
4. L Ljung & T Soderstrom, *Theory and Practice of Recursive Identification*, MIT Press, 1983.
5. J. Gertler, *Fault Detection and Diagnosis in Engineering Systems*. Marcel Dekker, 1998.
6. R. Chiang L. H., Russell E.L. and Braatz R.D. Fault Detection and Diagnosis in Industrial Systems. Springer-Verlag, 2001.

Unit 2.1: Nonlinear and Adaptive Control Systems

1. Cook, P. A., *Nonlinear Control Systems, 2nd Ed*, Prentice Hall, 1994
2. Slotine, J. E. and Li, W., *Applied Nonlinear Control, Prentice Hall*, New Jersey, 1991

3. Vidyasagar, V., *Nonlinear Control Systems Analysis, 2nd Ed*, Prentice Hall, New Jersey, 1993
4. Khalil, H., K., *Nonlinear Systems, 3rd Ed*, Prentice Hall, New Jersey, 2003
5. Krstic, M., Kanellakopoulos, I. and Kokotovic, P. V., *Nonlinear and Adaptive Control Design*, John Wiley & Sons, New York, 1995
6. Marino, R. and Tomei, P. *Nonlinear Control Design: Geometric, Adaptive, and Robust*, Prentice Hall, London, 1995
7. Narendra, K. S. and Annaswamy, A. M. *Stable Adaptive Systems*, Prentice Hall, New Jersey, 1987
8. Ioannou, P. A. and Sun, J., *Robust Adaptive Control*, Prentice Hall, New Jersey, 1996

Unit 2.2: Intelligent Control & Robotics

1. R. Babuska, *Fuzzy Modelling for Control*. Kluwer, 1998.
2. E. Wang L.-X. *A Course in Fuzzy Systems and Control*. Prentice Hall, 1997.
3. L Behera and I Kar, Intelligent Systems and Control: Principles and Applications, Oxford University Press, 2009.
4. D. Katic and M. Vukobratovic, Intelligent Control of Robotic Systems, Kluwer Academic Publishers, 2003.
5. Princeton: Robotics and Intelligent Systems: http://www.princeton.edu/~stengel/MAE345Lectures.html
6. MIT: Underactuated robotics: http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-832-underactuated-robotics-spring-2009/

Unit 2.3: Optimal and Robust Control

1. J. B. Burl, *Linear Optimal Control*, Addison Wesley, 1998.
2. L. Ljung and T. Glad: *Control Theory: Multivariable and Nonlinear Methods*. Taylor and Francis, 2000.
3. H. Kwakernaak and R. Sivan: *Linear Optimal Control Systems*. Wiley 1972. http://www.ieeecss.org/main/classic-books/classic-books
4. K Zhou, JC Doyle and K Glover, *Robust and Optimal Control*, Prentice Hall
5. M Green and D Limebeer, *Linear Robust Control*, Prentice Hall
6. Skogestad and Postelwaithe, Multi Variable Feedback Control