EE3304 Digital Control Systems
Part I

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Course Assessment

1. ***70%*** Final Examination (A4 cheat sheet)
2. ***10%*** Assignment (Part I)
3. ***15%*** Assignment and ***5%*** Laboratory (Part II)

Assignment (Part I)

1. ***10%*** of final grade
2. Individual design-based assignment
3. Available on IVLE from ***25 January 2016***
4. Report submission deadline ***26 February 2016***

Recommended Software

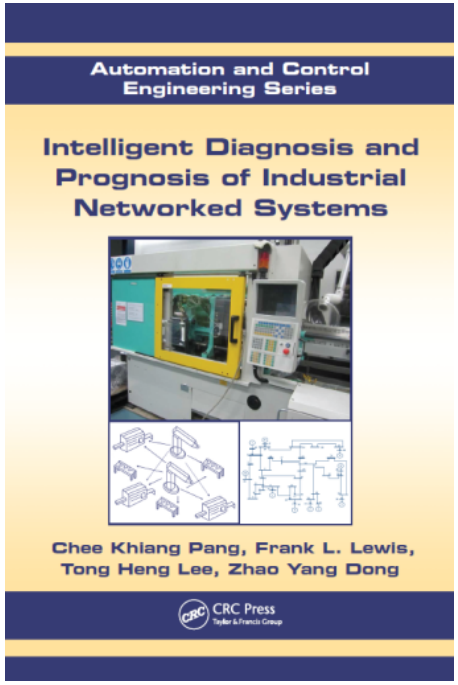
MATLAB
www.mathworks.com

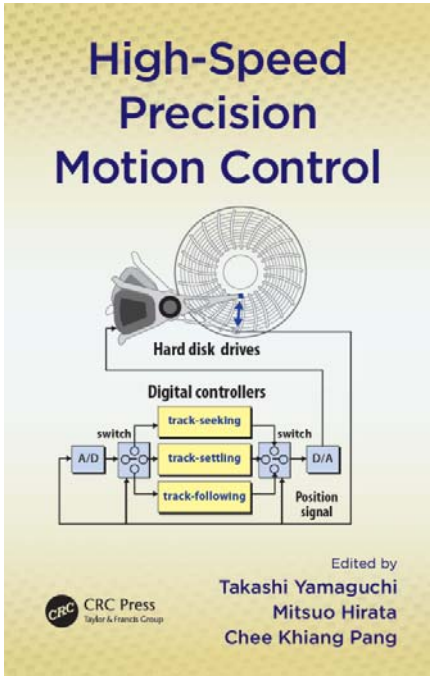
Reference Textbooks (I)

1. G. F. Franklin, J. D. Powell, and M. L. Workman, *Digital Control of Dynamic Systems* (3rd ed.), Addison-Wesley Longman, 1998
2. K. J. Astrom and B. Wittenmark, Computer-Controlled Systems: Theory and Design (3rd ed.), Prentice Hall, 1997
3. G. F. Franklin, J. D. Powell, and A. Emami-Naeini, *Feedback Control of Dynamic Systems* (7th ed.), Pearson, 2015
4. K. Ogata, *Discrete-Time Control Systems* (2nd ed.), Prentice Hall, 1994

Reference Textbooks (II)

1. **C. K. Pang**, F. L. Lewis, T. H. Lee, and Z. Y. Dong, *Intelligent Diagnosis and Prognosis of Industrial Networked Systems*, CRC Press, Taylor and Francis Group, Boca Raton, FL, USA, 2011
2. T. Yamaguchi, M. Hirata, and **C. K. Pang** (eds.), *High-Speed Precision Motion Control,* CRC Press Taylor and Francis Group, Boca Raton, FL, USA, 2011
3. T. Yamaguchi, M. Hirata, and **C. K. Pang** (eds.), *Advances in High-Performance Motion Control of Mechatronic Systems*, CRC Press, Taylor and Francis Group, Boca Raton, FL, USA, 2013





- **Objectives**
  - ❖ **Fundamentals**, **Analysis**, **Design** (FAD)
- **Outcomes**
  - ❖ Analyze frequency content of sampled signals under various transformations
  - ❖ Design a digital controller using transform techniques based on required system specifications
  - ❖ Compute the various time responses and transfer functions in a digital control system