National Taiwan University

Department of Engineering Science and Ocean Engineering

2019 Winter Semester

Course: Automatic Control (ESOE 5113) 自動控制

Duration: Sep. 10, 2018~Jan.7, 2019 (Tue. 09:10~12:10 R204) **Credits:** 3

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Topics:

1. Basic Control System Concepts (1)
2. Transfer Functions of Physical Systems (2)
3. State Equations for Physical Systems (2)
4. Analysis using State-Space theory (1)
5. Analysis in Time Domain (4)
6. Design in Time Domain (2)
7. Analysis in Frequency Domain (2)
8. Design in Frequency Domain (2)

Textbook:

1. Norman S. Nise, 'Control Systems Engineering', 8th ed., Wiley & Sons Ltd., 2019.

References:

1. Katsuhiko Ogata, 'Modern Control Engineering', 5th Ed., Prentice Hall, 2010.
2. Richard C. Dorf, Robert H. Bishop, 'Modern Control Systems', 11th Ed., Pearson Education Inc., 2008.
3. B. C. Kuo & F. Golnaraghi, 'Automatic Control Systems', 10th ed., Wiley, 2017.
4. G. F. Franklin, J. D. Powell, and A. Emami-Naeini, Feedback Control of Dynamic System, 4th ed., Addison-Wesley, 2002.
5. Hunt, Brian R.; Lipsman, Ronald L.; Rosenberg, Jonathan M.; Coombes, Kevin R.; Osborn, John E.; Stuck, Garrett J., A Guide to MATLAB: For Beginners and Experienced Users, Print ISBN 13: 9780521850681, June 2006.
6. Kiusalaas, Jaan, Numerical Methods in Engineering with MATLAB® Print ISBN 13: 9780521852883, August 2005.
7. Shampine, L. F.; Gladwell, I.; Thompson, S., Solving ODEs with MATLAB Print ISBN 13: 9780521824040, May 2003.

Mid-Term Exam.: 20%, Homeworks x6 : 50%,

Final-Term Exam.: 20%, General Performance 10%