

Syllabus for Admission to MS and PhD in Control Systems

School of Computing and Electrical Engineering,
Indian Institute of Technology Mandi

November 15, 2017

Mathematics:

Single variable and many variable calculus; Complex analysis; Linear differential equations; Linear algebra.

Engineering:

Basic computer programming; Boolean logic; Sequential logic and state machines; Basic electric circuits; Fourier series and Fourier transforms; Laplace transforms; Mathematical modelling of signals and systems;

Control Systems:

Linear systems - time domain and frequency domain analysis; PID, lead, lag and similar compensation techniques.

Reference text-books:

1. Kreyszig, Erwin. Advanced engineering mathematics. John Wiley & Sons, 2010.
2. Lee, Edward and Varaiya, Pravin. Structure and Interpretation of Signals and Systems, Second Edition, ISBN 978-0-578-07719-2, 2011. <http://leearaiya.org>
3. Aström, Karl and Murray, Richard. Feedback systems: an introduction for scientists and engineers. Princeton university press, 2010. http://www.cds.caltech.edu/~murray/amwiki/index.php/Second_Edition
4. Kuo, Franklin. Network Analysis and Synthesis. Wiley India, 2nd Edition, 2009.

Note:

To know more about the group and our research activities, visit the website:
<http://mandicon.iitmandi.ac.in>