



DC POWER TRANSMISSION SYSTEMS

PROF. KRISHNA S

Department of Electrical and Electronics Engineering
IIT Madras

TYPE OF COURSE : New | Elective | UG/PG**COURSE DURATION** : 12 weeks (27 Jan' 20 - 17 Apr' 20)**EXAM DATE** : 25 Apr 2020**PRE-REQUISITES** : Knowledge of electric circuit analysis and power electronic devices**INTENDED AUDIENCE** : Interested students**COURSE OUTLINE** :

This course gives an introduction to the DC power transmission system using the conventional line commutated converters. The topics covered include a detailed analysis of the 6 pulse line commutated converter (LCC), 12 pulse LCC, capacitor commutated converter, DC link control, and design of single tuned filter.

ABOUT INSTRUCTOR :

Prof. Krishna S received B.E. degree in Electrical Engineering from Bangalore University in 1995, and M.E. and Ph.D. degrees in Electrical Engineering from Indian Institute of Science in 1999 and 2003 respectively. He was with Kirloskar Electric Company, Bangalore, from 1995 to 1997. He was an Assistant Professor at M.S. Ramaiah Institute of Technology from 2003 to 2008. In 2008, he joined Indian Institute of Technology Madras where he is currently an Associate Professor in the Department of Electrical Engineering. He has authored the book "An Introduction to Modelling of Power System Components" published by Springer in 2014. His research area is power system studies.

COURSE PLAN :**Week 1:** Choice of Converter Configuration for any Pulse Number**Week 2:** Analysis of 6 Pulse Line Commutated Converter**Week 3:** Capacitor Commutated Converter**Week 4:** 12 Pulse Line Commutated Converter**Week 5:** Types of DC Link**Week 6:** DC Link Control**Week 7:** Multi-Terminal DC System – Applications, Types**Week 8:** Non-characteristic Harmonics**Week 9:** Filters – Design of Single Tuned Filter**Week 10:** Comparison of AC and DC Transmission – Economics and Technical Performance