

EE6501 POWER ELECTRONIC CONVERTERS

Academic Unit: 3
Prerequisite: Nil
Effective: Acad Year 2006/07
Last update: January 2006

OBJECTIVE

The objective of this course is to familiarize the participating individuals with advanced aspects of power electronic converters. In order to provide a comprehensive understanding, coverage would be provided from basic device levels to advanced power electronic converters. Control aspects would be highlighted, and practical case studies would be discussed.

DESIRED OUTCOME

Having graduated from this course, an individual is expected to gain a good understanding of the theory and industrial applications of semiconductor devices, their protection aspects, and their applications in power conversion schemes. This would prepare the individual for R&D careers in utilities or in industries dealing with advanced power electronic equipment.

OTHER RELEVANT INFORMATION

This course is aimed at graduate students or engineers already working in related fields. Prior knowledge of power, electronics and control theory at the undergraduate level is required.

CONTENT

Introduction. AC-to-DC Converters. DC-to-DC Converters. DC-to-AC Converters.

ASSESSMENT SCHEME

Continuous Assessment	20%
Final Examination	80%

TEXTBOOK

1. Mohan N, Undeland T M, and Robbins W P, Power Electronics - Converters, Applications and Design, Third Edition, John Wiley & Sons, Inc., New York, 2003.

REFERENCES

1. Rashid M H, Power Electronics, Circuits, Devices and Applications, Prentice Hall Pearson Education, Inc., Third Edition 2004.
2. Bose B K, Modern Power Electronics and AC Drives, Prentice Hall, NJ, 2002.