

[MGA101] DESING OF POWER ELECTRONIC CONVERTERS

GENERAL INFORMATION

Studies	UNIVERSTIY MASTER IN ENERGY AND POWER ELECTRONICS		Subject	POWER CONVERTER DESIGN, MODELLING AND ANALYSIS	
Semester	1	Course	1	Mention / Field of specialisation	
Character	COMPULSORY		Language	CASTELLANO	
Plan	2015	Modality	Adapted Face-to-face	Total hours	78 class hours + 47 non-class hours = 125 total hours
Credits	5	Hours/week	4.33		

PROFESSORS

BARAIA-ETXABURU ZUBIAURRE, IGOR

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
DESING OF POWER ELECTRONIC CONVERTERS	Basic knowledge about the structure and operation of power semiconductors
STATISTICS CONVERTERS	Basic knowledge about the structure and operation of power electronic converters

SKILLS

VERIFICA SKILLS

SPECIFIC

MGC01 - Dimensioning and electrically designing the different elements that make up the converter.

MGC02 - Analysing the thermal behaviour of the converter.

MGC03 - Building and materialising the converter.

CROSS

MGTR10 - To share knowledge, reasoning and conclusions with specialist and non-specialist audiences in clear, unambiguous ways.

MGTR11 - To lead work teams effectively and efficiently in order to achieve common goals.

MGTR12 - To analyse complex information and situations in the field of study, considering several solutions for each problem and making the right decision in a given context, taking social and ethical implications into account.

MGTR13 - To identify product or business development opportunities, managing the human and material resources adequately.

BASIC

M_CB10 - To have learning skills and the capacity for self-guided or independent subsequent learning.

M_CB6 - To have and understand knowledge which provides a base or opportunity to be original in the development and/or application of ideas, often in an investigation context

M_CB7 - To know how to apply the acquired knowledge and competencies and the ability to solve problems in new or unfamiliar contexts within wider (or multidisciplinary) environments related to their field of study

M_CB8 - To be able to integrate different types of knowledge and make complex judgements based on information that, in spite of being partial or limited, includes ideas on the social and ethical responsibilities associated with the application of knowledge

M_CB9 - To share knowledge, conclusions and their rationale with specialised and lay audiences in a clear, unambiguous manner

CONTENTS

1 - Review of power semiconductor devices

2 - Layout of the main power circuit

3 - Thermal analisys and heat evacuation

4 - Advanced driver functions

5 - Electromagnetic compatibility

6 - Pasive components

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

(No resources)

Bibliography

Notas de aplicación de SEMIKRON 2011

Diseño de convertidores de potencia - Barry Williams