ANX-PR/CL/001-01

LEARNING GUIDE

SUBJECT

53001536 - Seminar 1

DEGREE PROGRAMME

05BG - Master Universitario En Electronica Industrial

ACADEMIC YEAR & SEMESTER

2018/19 - Semester 2

Index

Learning guide

1. Description

1.1. Subject details

Name of the subject	53001536 - Seminar 1
No of credits	1.5 ECTS
Type	Compulsory
Academic year ot the programme	First year
Semester of tuition	Semester 2
Tuition period	February-June
Tuition languages	English
Degree programme	05BG - Master universitario en electronica industrial
Centre	05 - Escuela Tecnica Superior de Ingenieros Industriales
Academic year	2018-19

2. Faculty

2.1. Faculty members with subject teaching role

Name and surname	Office/Room	Email	Tutoring hours *
Miroslav Vasic (Subject coordinator)		miroslav.vasic@upm.es	- -

* The tutoring schedule is indicative and subject to possible changes. Please check tutoring times with the faculty member in charge.

3. Prior knowledge recommended to take the subject

3.1. Recommended (passed) subjects

El plan de estudios Master Universitario en Electronica Industrial no tiene definidas asignaturas previas recomendadas para esta asignatura.

3.2. Other recommended learning outcomes

- Basic knowledge of Analog Electronics

- Basic knowledge of Power Electronics

- Basic knowledge of Digital Electronics and Embedded Systems

4. Skills and learning outcomes *

4.1. Skills to be learned

CB06 - Poseer y comprender conocimientos que aporten una base u oportunidad de ser originales en el desarrollo y/o aplicación de ideas, a menudo en un contexto de investigación

CB07 - Que los estudiantes sepan aplicar los conocimientos adquiridos y su capacidad de resolución de problemas en entornos nuevos o poco conocidos dentro de contextos más amplios (o multidisciplinares) relacionados con su área de estudio

CG01 - Haber adquirido conocimientos avanzados y demostrado, en un contexto de investigación científica y tecnológica o altamente especializado, una comprensión detallada y fundamentada de los aspectos teóricos y prácticos y de la metodología de trabajo en uno o más campos de estudio

CG06 - Haber desarrollado la autonomía suficiente para participar en proyectos de investigación y colaboraciones científicas o tecnológicas dentro de su ámbito temático, en contextos interdisciplinares y, en su caso, con una alta componente de transferencia del conocimiento.

CT01 - Uso de la lengua inglesa

CT07 - Trabajo en contextos internacionales

4.2. Learning outcomes

RA109 - Diferenciar entre las posibles técnicas, aplicaciones y mecanismos de implementación en el campo del procesado digital de la señal

RA1 - Comprensión de los principios de operación de la conversión de la energía y de las principales tecnologías de semiconductores

RA11 - Adquirir conocimientos de aspectos aplicados en el campo del procesamiento digital de la señal

RA102 - Identificar oportunidades para el desarrollo de un trabajo científico original

RA103 - Revisar el estado del arte en el tema elegido destacando las ideas principales

RA101 - Examinar el rol de la electrónica de potencia en las diferentes arquitecturas de red.

* The Learning Guides should reflect the Skills and Learning Outcomes in the same way as indicated in the Degree Verification Memory. For this reason, they have not been translated into English and appear in Spanish.

5. Brief description of the subject and syllabus

5.1. Brief description of the subject

The purpose of the advanced seminars is to present current research topics providing presentations and lectures from invited professors or experts in the area of interest. These seminars allow students to improve their knowledge in areas that are not covered with other subjects which has a much more fundamental content. Therefore, the planning and the agenda of each seminar depend on each lecture and invited professor.

5.2. Syllabus

1. Introduction

2. Optimizing power consumption

3. Estimating power consumption

4. An application example

5. Power supply Perspective

   5.1. Introduction to power converters: Synchronous Buck converter

   5.2. Basic control theory: dynamic modeling and basic concepts

   5.3. Design trade-offs for DVS

   5.4. Losses in a power converter: ZVS, light load techniques

   5.5. Switched Capacitors

6. Schedule

6.1. Subject schedule*

Week	Face-to-face classroom activities	Face-to-face laboratory activities	Other face-to-face activities	Assessment activities
1	**Clase de Teoría** Duration: 08:00			**The students will have an exam that will cover the seminar topic.** Final examination Duration: 01:00 **Students participate in the seminar by responding to speaker?s questions and by resolving small problems during the seminar.** Continuous assessment Duration: 08:00
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The independent study hours are training activities during which students should spend time on individual study or individual assignments.

Depending on the programme study plan, total values will be calculated according to the ECTS credit unit as 26/27 hours of student face-to-face contact and independent study time.

* The subject schedule is based on a previous theorical planning of the subject plan and might go to through experience some unexpected changes along throughout the academic year.

7. Activities and assessment criteria

7.1. Assessment activities

7.1.1. Continuous assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
1	Students participate in the seminar by responding to speaker?s questions and by resolving small problems during the seminar.		Face-to-face	08:00	5%	5 / 10	CB06 CB07 CG01 CG06 CT01 CT07

7.1.2. Final examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
1	The students will have an exam that will cover the seminar topic.		Face-to-face	01:00	95%	5 / 10	CB06 CB07 CG01 CG06 CT01 CT07

7.1.3. Referred (re-sit) examination

No se ha definido la evaluación extraordinaria.

7.2. Assessment criteria

The purpose of the advanced seminars is to present current research topics providing presentations and lectures from invited professors or experts in the area of interest. These seminars allow students to improve their knowledge in areas that are not covered with other subjects which has a much more fundamental content. Therefore, the planning and the agenda of each seminar depend on each lecture and invited professor.