Course guide
240211 - 240AU051 - Vehicle Body Parts

Unit in charge: Barcelona School of Industrial Engineering
Teaching unit: 737 - RMEE - Department of Strength of Materials and Structural Engineering.
Degree: MASTER'S DEGREE IN AUTOMOTIVE ENGINEERING (Syllabus 2019). (Compulsory subject).
Academic year: 2022 ECTS Credits: 6.0 Languages: Spanish

LECTURER

Coordinating lecturer: Josep Maria Pons Poblet
Others: Guillermo de Castro Lodosa, Jordi Vera Gil, Sergio Murcia, Joan Colet Galí, Josep Lerma, Esteban Nonay, Alberto Toyas

PRIOR SKILLS

Knowledge of Continuum Mechanics, Material Strength of Materials, Mechanics, Graphic Expression, Manufacturing Technologies at Grade-Level

REQUIREMENTS

Minimum level of knowledge of Spanish: B2

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CEAU 3. (ENG) Explicar l'arquitectura d'un vehicle d'automoció, el seu comportament, les seves parts i els sistemes que l'integren.
CEAU11. (ENG) Planificar, portar un seguiment i controlar el desenvolupament de productes, aplicant coneixements d'electricitat, electrònica i els sistemes d'emmagatzematge d'energia.
CEAU14. (ENG) Seleccionar i utilitzar les eines adequades per dissenyar elements d'automoció en resposta a les especificacions tècniques donades.
CEAU15. (ENG) Realitzar, presentar i defendre un exercici original realitzat individualment davant d'un tribunal universitari, consistent en un projecte integral d'Enginyeria d'Automoció de naturalesa professional en què se sintetitzin les competències adquirides en els ensenyaments.

Transversal:
CTAU3. (ENG) TREBALL EN EQUIP: Ser capaç de treballar com a membre d'un equip interdisciplinar, ja sigui com un membre més, o realitzant tasques de direcció, amb la finalitat de contribuir a desenvolupar projectes amb pragmatisme i sentit de la responsabilitat, assumint compromisos tenint en compte els recursos disponibles.

TEACHING METHODOLOGY

Teaching methodologies: Combined sessions of theory, examples and problems, practical laboratory sessions, realization and presentation of a group work.
LEARNING OBJECTIVES OF THE SUBJECT

Understand all the determinants taking part in the conception and design of a car's bodywork.
Know all the groups of elements defining the bodywork and its functions.
Know for each one of the bodywork’s elements the criteria and the parameters of the design, actual solutions and future trends.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours small group</td>
<td>18,0</td>
<td>12.00</td>
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<tr>
<td>Hours large group</td>
<td>36,0</td>
<td>24.00</td>
</tr>
<tr>
<td>Self study</td>
<td>96,0</td>
<td>64.00</td>
</tr>
</tbody>
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Total learning time: 150 h

CONTENTS

1. Conceptual definition of a car body

Description:
Basic architecture and body variants. Package and ergonomy. Body Typical sections.

Specific objectives:
Introduce students to the knowledge and basic approach to the architecture of a self-supporting body.

Full-or-part-time: 22h 06m
Theory classes: 5h 24m
Practical classes: 2h 42m
Self study : 14h

2. Body structure development

Description:

Full-or-part-time: 26h 54m
Theory classes: 6h 36m
Practical classes: 3h 18m
Self study : 17h

3. Moving body elements and closures

Description:
Specific dynamic requirements. Passive safety requirements. The components development process. Static and dynamic sealing.

Full-or-part-time: 26h 54m
Theory classes: 6h 36m
Practical classes: 3h 18m
Self study : 17h
4. Body exterior trim

Description:

Full-or-part-time: 22h 06m
Theory classes: 5h 24m
Practical classes: 2h 42m
Self study : 14h

5. Body interior trim

Description:

Full-or-part-time: 51h 54m
Theory classes: 12h 36m
Practical classes: 6h 18m
Self study : 33h

GRADING SYSTEM

Evaluation system: Partial exam (30%), Course Work (30%), Final exam (40%)
In case of having to attend the Reassessment exam, the final mark (NF) will be calculated as: \[ NF = 0.70 \cdot \text{Reassessment exam mark} + 0.30 \cdot \text{Coursework mark}. \]

EXAMINATION RULES.

Norms for the evaluation: General norms; before each evaluation the particular and specific norms will be notified, if necessary.